Care Coordination Manual

Children with Elevated Blood Lead Levels
Public and Private Practitioners

Virginia Department of Health
Childhood Lead Poisoning Prevention Program

University of Virginia
Division of Medical Toxicology
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VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

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Chapter 1

Introduction and Sources of Lead

Chapter 1 – Introduction and Sources of Lead

Background

Childhood lead poisoning is a major, preventable environmental health problem. The persistence of lead poisoning, in light of present knowledge about the sources, pathways and prevention of lead exposure, continues to present a direct challenge to clinicians and public health authorities. As a result of industrialization, lead is common in the environment. Lead has no known physiological value and children are particularly susceptible to its toxic effects. There is no safe blood lead level. Most poisoned children have no apparent symptoms, and consequently, many cases go undiagnosed and untreated. Blood lead levels (BLLs) as low as 10 micrograms per deciliter (µg/dL) may be associated with harmful effects on children's learning and behavior. At higher levels, lead exposure can have devastating health consequences, including encephalopathy, seizures, coma and even death. In 1991, the Centers for Disease Control and Prevention (CDC) called for the elimination of childhood lead poisoning. In 1997, the CDC updated screening and medical follow-up recommendations, lowering the level of concern, and encouraging targeted testing of high-risk children. Blood lead testing is encouraged as an important element of a comprehensive program to eliminate childhood lead poisoning. The goal of such testing is to identify children who need individual interventions to reduce their exposure. The task of health care providers is to identify those determined to be at high-risk and assure timely blood level testing and follow-up services.

Sources of Lead Exposure in Children

Paint

Although the addition of lead to residential paint and similar surface-coating materials, such as varnishes and stains, was banned in 1978, 74% of dwellings constructed prior to 1980 contain some leaded paint. The amount of lead in paint is much greater in homes built before 1950. Direct and indirect exposure of children to leaded paint that has deteriorated because of deferred maintenance is likely the major factor in the increased risk for EBLL associated with poverty and living in older housing. Although children may be exposed to lead from paint directly by ingesting paint chips, they are more commonly exposed by ingesting house dust or soil contaminated by leaded paint. Lead contamination of dust or soil occurs when leaded paint deteriorates or is subject to friction or abrasion (as on window sashes, steps, and doors). In addition, lead can be dispersed when paint is disturbed during demolition, remodeling, paint removal, or preparation of painted surfaces for repainting. Other hazards include using architectural salvage in newer housing.

Interior dust

Interior house dust can become contaminated with lead as the result of the deterioration or disturbance of leaded paint, the tracking or blowing in of contaminated soil, and the fallout of airborne lead particulate from industrial or vehicular sources. The condition of leaded paint more accurately predicts lead exposure than the lead content of paint by itself. Older homes in poor condition have much higher dust lead levels than older homes in good condition. The amount of lead in house dust is more predictive of BLLs in children than is the amount of lead in house paint. The most widely used sampling technique, in which a wipe sample is collected can

determine only lead surface loading. Lead loadings vary considerably among the types of surfaces commonly tested, with levels on interior window sills and window "wells" (the part of the window that receives the lower sash when closed) often being, respectively, 1 and 2 orders of magnitude higher than those found on floors. Higher levels on window components may reflect a combination of lead dust derived from friction and the deterioration of leaded paint on the windows themselves and from the settling of airborne dust from outside of the dwelling. Dust lead loading on all three surfaces (floors, windowsills, and window wells) correlates with BLLs in children. Testing lead dust levels in a residence can only be done by a licensed risk assessor/inspector.

Soil and Exterior Dust

Contamination of soil and exterior dust has been linked to point source emissions, such as lead smelters, fall-out from past use of leaded gasoline, and weathering of exterior leaded paint. Soil located next to dwellings typically has higher lead content than that sampled from other locations in a yard. Potentially hazardous levels of lead in soil are not uncommon. Results of a national survey in which soil samples were collected from both bare and covered soil showed that residences with intact exterior leaded paint are more than three times as likely to have soil lead levels exceeding 500 ppm than are dwellings without lead in exterior paint. Results also showed that soil contamination is eight times more common at residences with non-intact leaded exterior paint than at residences without exterior leaded paint. In urban neighborhoods, high levels of lead have also been found in exterior dust collected from paved surfaces, such as sidewalks. Soil lead content is an important predictor of children's risk for an EBLL, though less important than the lead content of interior floor dust. Soil samples taken from play areas in a yard have a stronger relationship to children's BLLs than samples from other locations.

Tap water

Lead found in tap water usually is from the corrosion of lead-containing materials found in water distribution systems and household plumbing. Exposure to lead in tap water has been reduced by measures taken during the last two decades under the requirements of the 1986 and 1996 amendments to the Safe Drinking Water Act and a subsequent EPA regulation (the Lead and Copper Rule). The latter regulation, which only applies to public water systems, requires those systems to monitor tap water for lead and to implement public education and other measures to reduce lead levels in drinking water if they exceed 15 μg/L in more than 10% of household samples. Lead levels are reduced by treating the supplied water to make it less corrosive and, in some cases, by replacing lead water-service lines. These regulations do not apply to the more than 40 million households supplied by private well water that can have elevated levels of lead if the water is corrosive and lead is present in the well pump or household plumbing system. In most jurisdictions, there is no monitoring for lead in the drinking water supplied by private wells. A number of studies, mostly of adults, have attempted to characterize the relationship between lead levels in drinking water and BLLs. Data from these studies indicate that exposure to water with a lead content close to the EPA action level would not, by itself, be expected to produce an EBLL. However, the individual risk will vary depending upon the circumstances and amount of water consumed. For example, infants consuming formula prepared with lead-contaminated water may be at particular risk because of the large amount of water they consume relative to their body size.

Parent's Work Environment

Adults may bring lead dust home from their job on clothes, hands, hair, and shoes. Occupations with exposure to lead include: house painting or wallpapering, home renovation, furniture refinishing, lead smelting or mining, firearms instruction, automotive repair, battery manufacturing or recycling, or bridge/tunnel/elevated highway construction.

Parent's Hobby

Certain hobbies may contaminate the home with lead dust or fumes, or contaminate the parent's clothes, hands, hair, or shoes. Examples: melting lead for homemade musket balls or fishing tackle, target shooting, making stained glass (artists may use lead solder and solid lead came which wraps around pieces of glass and frames the artwork), and ceramics.

Ceramics

Lead is used in some ceramic glazes because it produces certain colors and helps prevent cracking. Improperly fired glazes and deteriorating glazes may leach lead into food and beverages, especially following prolonged contact or if the food is hot or acidic. The FDA has established leaching limits on commercially made or imported products, but handmade items are not regulated. Ceramics bought in foreign countries and items not intended for food use may also leach high levels of lead.

Folk Remedies

Some Hispanic, Indian, Asian, and Middle Eastern folk medicine practices consider heavy metals to be therapeutic. Certain folk remedies for digestive ailments have been found to contain very high levels of lead. Names include Azarcon, Alarcon, Coral, Pay-loo-ah, and Greta. The product is likely a capsule, or an orange or yellow powder, which is ingested.

Lead Solder

Solders with varying concentrations of lead are used in the electronics industry and in making stained glass. Some people may use lead solder illegally to make fishing tackle or in home plumbing projects. Homemade moonshine stills may be soldered with lead, which can result in lead leaching into the drink. In 1995 the FDA banned lead-soldered food cans, but some may still occasionally be imported illegally into the U.S., especially to ethnic grocery stores. Soldering is messy and creates tiny fragments and dust-sized particles of lead, as well as lead fumes.

Fishing Tackle

Lead weights and sinkers are small and smooth and easily swallowed by curious children, especially when imitating adults who use their teeth to manipulate the tackle.

Costume/Toy Jewelry

Cheap jewelry marketed to children, often sold in vending machines, has been the source of several documented cases of acute lead poisoning. Children readily chew or suck on the items, or

unintentionally swallow them. Toy jewelry containing lead is a banned hazardous substance; however such items may be on the market. Imported jewelry is especially suspect, as well as privately made jewelry made from imported components.

Toys

Many parents are concerned about the recent spike in national recalls for toys containing unsafe levels of lead. The Consumer Product Safety Improvement Act of 2008 (CPSIA) lowers the amount of lead that can be in products intended for children under the age of twelve. Toys that were manufactured before this act may contain lead levels that may harm children. Be aware when purchasing toys that were manufactured before 2009; especially imported toys and toys found at consignment shops or second hand stores. To help you stay informed of the latest product recalls and information on the CPSIA, visit the US Consumer Product Safety Commission http://www.cpsc.gov/.

Curtain weights

Some are made of lead, and are of swallowable size. They are sewn into the hem of curtains or drapes.

Artist Oil Paint

One color of fine art oil paint, "flake white," contains lead carbonate. Many artists feel there is no substitute for this product, which enhances a painting's durability. They lobbied successfully for its exemption from the US Consumer Product Safety Commission's 1977 ban on lead paint.

Vinyl Mini-Blinds

Vinyl mini-blinds may contain lead. Over time, exposure to heat and sunlight deteriorates the vinyl and lead dust forms on the surface. Blinds made with lead were recalled and banned by the Consumer Product Safety Commission in 1997, but prior to then millions of them were sold and may still be in the U.S. New imported mini blinds that are not manufactured in the United States may contain lead. When purchasing mini blinds look for the "Lead-Free" labeling regardless of the age of the mini blinds.

Pool Cue Chalk

The use of lead as a coloring agent in pool cue chalk is often denied by the industry. Nevertheless, one study in 1996 did conclude that 3 of 23 brands of pool cue chalk tested contained lead.

Antique Toys

The Consumer Product Safety Commission continually screens newly produced toys for hazardous substances including lead or lead paint. Antique toys, however, may contain lead, especially toy cars, planes, or trucks, painted toys, and toy soldiers or other figurines.

Glassware (Leaded Crystal)

Like ceramics, leaded crystal can leach lead into food or beverages, especially following prolonged contact or if the beverage is acidic. Experts advise against storing beverages in a lead crystal container or drinking from crystal routinely. Leaded crystal baby bottles should never be used.

Kohl

Kohl is an ancient black cosmetic still used by some women in the Middle East, Asia, and Africa. It often contains ground galena, a metallic mineral and source of lead. Some cultures also put kohl on the umbilical stump of newborns, or decorate the eyes and faces of children. Kohl is illegal in the U.S., yet may be found in some ethnic shops or available for purchase online. Travelers may bring kohl home to the U.S., unaware of its dangers.

Mexican Candies

Studies have found high levels of lead in many Mexican candies, especially those with tamarind or chili powder as an ingredient. Ink used to print the wrappers has also been shown to contain dangerous amounts of lead.

Projectiles (i.e. bullets)

Lead has been used to make projectiles since the mid 15th century. Its widespread availability, malleability, and high density continue to make it ideal for this purpose. Today most bullets for shotguns, handguns, and rifles are made of a lead core surrounded by a copper or steel jacket to protect the lead from changing shape at high speeds. Economical solid lead bullets are also available, as are traditional lead musket balls. Curious young children will readily swallow projectiles. Buckshot (small balls of lead used by hunters) may remain in cooked game and be unintentionally eaten. Also, lead from projectiles that remain lodged in the acidic synovial fluid of joints can be absorbed into the blood.

Lead Hazard Control Measures

Interventions to reduce exposure to lead in the residential environment include measures focused on immediate hazards to current occupants, such as removing or covering non-intact leaded paint, repairing or replacing windows to prevent abrasion of leaded paint on moving surfaces, sealing floors to create smooth and cleanable surfaces, using professional cleaners to control household dust, and covering bare, contaminated soil. Additional interventions may be carried out to prevent lead hazards from developing in the future, such as replacing building components that have leaded paint (whether intact or not) and removing (stripping) leaded paint from components left in the dwelling using lead safe work practices.

Most studies evaluating the effectiveness of lead hazard control measures for reducing EBLLs have lacked controls. In addition, many studies evaluated interventions prior to the institution of stringent procedures for limiting the contamination of residences with leaded dust. In general, these earlier studies showed that among children with baseline BLLs greater than about 25 µg/dL, measures to remove or repair non-intact leaded paint were followed by declines in BLLs

of 20% to 30% over the following year. In one controlled study, the decline in BLLs for children in treated dwellings was about twice that of children in untreated dwellings.

In homes of children with EBLLs, extensive removal of leaded paint without measures to prevent the children's exposure to lead dust and debris has also been associated with increases in the children's BLLs. These increases were apparently the result of corresponding increases in house dust lead levels. Consequently, regulations in many jurisdictions now prohibit certain hazardous paint removal methods, such as uncontained power sanding, and require safe work practices, cleaning, and dust lead testing to protect occupants from lead exposure associated with the disturbance of leaded paint. Most jurisdictions require that post-intervention dust lead levels be below clearance standards—the maximum allowable levels of lead. If the dust lead levels in a particular dwelling exceed the clearance standard, that dwelling cannot be reoccupied until additional cleaning or other measures reduce dust lead contamination to less than the clearance threshold. Clearance sampling can only be conducted by a licensed lead professional.

Chapter 2

Requirements and Recommended Guidelines

Chapter 2 - Requirements and Recommended Guidelines

Background

Childhood lead poisoning is a common pediatric health problem in the United States, even though it is entirely preventable. The persistence of lead poisoning, in light of present knowledge about the sources, pathways and prevention of lead exposure, presents a direct challenge to clinicians and public health authorities. Most lead poisoned children have no apparent symptoms and many cases go undiagnosed and untreated. Lead poisoning is widespread and is not solely a problem of inner city or minority children. No socioeconomic group, geographic area, racial or ethnic population is spared.

The most recent version of the *Guidelines for Childhood Lead Poisoning Screening in Virginia* can be found in the Appendix A. The most recent version of Virginia's high-risk ZIP Codes is found on the Lead Safe Virginia Web site or call 877-668-7987 to request a copy be mailed. Blood lead levels should be obtained in children at ages 1 and 2 if they meet ANY one of the criteria noted. In addition, children ages 3-5 years of age who have not previously been tested, and moved to a new address in a high-risk area, or meet ANY one of the criteria below should also be tested. Medical follow-up does not begin until the blood level is greater than or equal to 10 µg/dL. Capillary blood lead samples are adequate for the initial blood lead test. Venous blood lead samples should be collected for confirmation for all elevated blood lead results.

Special Groups

<u>Medicaid</u>

The Centers for Medicare and Medicaid Services (CMS) require that all Medicaid-enrolled children have a blood lead test at both 12 and 24 months of age. Children enrolled in Medicaid between the ages of 24 months and 72 months of age must also receive a blood lead test if both prior tests were not performed The medical record will be deemed insufficient if the recipient does not have a lead test record. has not been previously tested.
Required Physician Activities for EPSDT Lead Testing

- Test all Medicaid enrolled children at both 12 and 24 months of age.
- Take careful history regarding possible lead exposure at each routine visit.
- Test child if the parent or guardian requests testing due to possible exposure.
- Provide nutrition and risk reduction educational materials for parents.
- Confirm elevated capillary blood lead levels ≥ 10µg/dL. A venous specimen is recommended for confirmation especially if the level is ≥ 15µg/dL in order to proceed with an environmental investigation. However, a second capillary sample for confirmation is allowable if performed within 12 weeks (84 days) of the original capillary sample. Best practice is to test the child within 30 days to assure the blood lead level is not rising.

Testing may be performed by venipuncture or capillary. Filter paper methods are also acceptable and preferred in many situations. The use of CLIA-waived testing machines must be approved through the Lead-Safe Virginia Program to assure proper quality assurance and reporting of all data per Virginia Regulations 12 VAC 5-120 by calling (804-864-7694).

Refugee Children

Each year thousands of persons leave their homelands to settle in new and distant lands. Among these are refugees who are defined as persons forced to flee his/her country of origin because of a well founded fear of persecution due to race, religion, nationality, political opinion, or membership in a particular social group.

The US Public Health Service Quarantine Stations submit notification of arrival and medical information for all refuges and immigrants with a classified health condition entering Virginia. The Virginia Newcomer Health Program (NHP) has entered demographic information from these notifications into a database that is then distributed to the local health districts. In fiscal years 1997-2002, Virginia received 10,488 refugees through the overseas admission program.

Initial Refugee Health screenings are done at the following Local Health Districts (Alexandria, Arlington, Fairfax, Roanoke, Central Shenandoah, Thomas Jefferson, Hampton, Peninsula, Rappahannock, Richmond, Henrico, and Chesterfield Co). The State Newcomer Health Program recommends that local health departments (LHD) follow CDC's testing guidelines. The first lead test on refugee children is often performed at the LHD, and follow-up testing is usually performed at a private provider's office. The refugee status for most of the children entitles them to Medicaid and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) services, and other social services for at least 8 months after their resettlement, regardless of family financial status. Upon United States arrival, all refugee children should have nutritional evaluations performed and should be provided with appropriate nutritional and vitamin supplements as indicated. Pre-existing health burdens such as chronic malnutrition, along with cultural, language, and economic barriers, compound refugee children's risk for lead poisoning.

Federal standards currently stipulate that a refugee medical screening take place within 90 days after a refugee's arrival in the United States. The CDC recommends blood lead testing of children within 90 days of arriving into the United States so treatment can be provided if necessary. The American Academy of Pediatrics also recommends testing children who have emigrated from other countries where lead poisoning is prevalent. Studies have shown that age is not a significant risk factor for EBLLs among refugee children. Although the risk for lead exposure among children older than 6 years may be the result of lead exposure in their country of origin, many of the prevailing health, social, and economic burdens accompany the children to the United States thus suggesting the value of screening all refugee children at time of arrival. The *Guidelines for Childhood Lead Poisoning Screening in* Virginia recently added this high-risk population. See Appendix A.

Within 3 to 6 months after refugee children are placed in permanent residences, it is recommended to repeat blood lead testing of refugee children aged 6 months to 6 years. This testing allows medical providers to determine if the source of the exposure is from their homeland or if the exposure is present at their new permanent residence in the United States. The follow up blood lead test should be considered a "medical necessity," regardless of the initial test result.

International Adoptees and Immigrants

Childhood lead poisoning is a problem worldwide. In other parts of the world predominant sources of lead are very different than in the United States. For example, leaded gasoline is still widely used in many countries and contributes to elevated blood lead levels, especially in urban children. Poorly glazed pottery leading to high food lead levels can be the most prominent source of lead in some areas, for example, in parts of Latin America. Point industrial sources may dramatically increase air and soil lead levels in parts of the world where environmental controls have not been effectively implemented, for example, in Eastern Europe. Lead contamination from cottage industries that recycle lead, often in backyards, are a problem in Central America and elsewhere. Many "non-Western" medicines (for example, greta and azarcon used to treat diarrhea or gastrointestinal upset) and cosmetics (for example, surma or kohl used around the eye for decorative or medicinal purposes) contain substantial quantities of lead and other metals. Rather than occurring as trace ingredients or trace contaminants, various lead compounds are used as major ingredients of traditional medicines in numerous parts of the world. "Traditional healers," using non- Western pharmacopeias manufacture these products, which are often brought to recent immigrant groups by friends and relatives. Examples of such exposures have been reported from the Arab cultures, from the Indo-Pakistan subcontinent, from China, and from Latin America. Lead poisoning has been reported among children adopted by U.S. citizens.

The American Academy of Pediatrics and CDC recommend that children who have been adopted or emigrated from countries where lead poisoning is prevalent should be tested for lead exposure. The *Guidelines for Childhood Lead Poisoning Screening in Virginia* recently added this high-risk population, as well as children that have recently traveled abroad. See Appendix A.

Pregnancy

Despite a steady decline in average blood lead levels in the U.S. population, women of childbearing age may still have blood levels exceeding 10 µg/dL. A woman of childbearing age with an EBLL is at risk of transmitting that lead to her fetus. Strong correlations between maternal and umbilical cord blood lead levels demonstrate that lead is transferred from the mother to the fetus throughout pregnancy. Fetal lead uptake is constant and cumulative until birth. High lead levels are known to cause neurobehavioral effects in infants and children, and the cumulative effects of low levels of lead exposure in utero and after birth can have detrimental effects. Management of prenatal lead exposure focuses on the recognition of exposure and the removal of the lead source. If a woman is found to have low-dose exposure, the prognosis for the infant is good if the infant can be protected from further exposure. Rarely is chelation therapy necessary for maternal indications. Poor nutrition resulting in diets deficient in calcium, iron, and zinc enhance maternal lead absorption. Improved diet and vitamin supplementation may lower lead levels. Recognition and removal of lead sources during the prenatal period can prevent maternal and neonatal morbidity. If a mother is determined to be at risk for lead toxicity, the healthcare provider should consider obtaining a screening lead level.

Chapter 3

Case Management

Chapter 3 – Case Management

Background

Coordination of care of a child with EBLLs is critical to successful case management. For each child, an individualized plan of follow-up must be devised and implemented. Members of the patient management team (i.e. PCP, health department) need to maintain open lines of communication and work together to ensure proper medical management and follow-up.

The detrimental effects of EBLLs in the range of 10 to 45 µg/dL are usually subclinical and may include neurodevelopmental impairment, often apparent only at a later age. If a child presents without symptoms, the child's PCP may have trouble convincing the child's caregiver of the importance of suggested interventions. Likewise, it is critical that PCPs not equate the absence of clinical symptoms, physical abnormalities, or abnormal laboratory results with an absence of toxicity. When evaluating a child with an EBLL, the health care team must identify the sources of a child's lead exposure. The most common source of lead in children with EBLLs is lead dust from deteriorated paint, but numerous other sources exist also (see Chapter 1).

Overview of Comprehensive Case Management

Case management of children with EBLLs involves coordinating, providing, and overseeing the services required to reduce their BLLs below the level of concern. It is based on the efforts of an organized team that includes the child's caregivers. Case management is not simply referring a child to other service providers, contacting caregivers by telephone, or minimal activities. The current model of case management has eight components: client identification and outreach; individual assessment and diagnosis; service planning and resource identification; the linking of clients to needed services; service implementation and coordination; the monitoring of service delivery, advocacy and evaluation.

Once an eligible child is identified the case manager should do the following:

- Visit the child's residence (and other sites where the child spends significant amounts of time).
- Assess factors that may impact the child's BLL Including sources of lead, nutrition, access to services, family interaction, and caregiver understanding.
- Oversee the activities of the case management team (this includes the child's primary care provider, local health department, and caregiver)
- Develop a written plan for intervention.
- Coordinate the implementation plan.
- Evaluate compliance with the plan and the success of the plan.

Who Provides Case Management?

The case manager is usually a member of the local public health department staff. In most cases, a management team can best meet the needs of an individual child. The team should include the case manager (local public health department), the child's caregiver, the child's PCP, and an environmental inspector (licensed risk assessor).

Time Frames for Initiating Case Management Services

A case manager should schedule an appointment with the child's caregiver as soon as possible after being assigned to the case. Local health departments providing case management services should give priority to children with the highest BLLs and those less than two years of age. If the caregiver does not have a telephone or one can not be reached by telephone, the case manager should visit the child's home and leave information at the door if no one is there.

For children with BLLs ≥ 45µg/dL, the case manager should contact the child's PCP immediately to determine whether the child is being chelated at home or in the hospital. If the child is hospitalized, the initial visit may take place at the hospital. It is important to clear the child's residence free from lead hazards or locate a safe residence that the child can be released to after their treatment at the hospital.

Under no circumstances should a child be released back into the environment in which they were poisoned without getting the property cleared for lead hazards. Releasing a child back into the hazardous environment can do more harm. Providers should contact the local health department to have an environmental inspector (licensed risk assessor) inspect and clear the property or contact the Lead-Safe Virginia Program toll free at 1-877-668-7987 or 804-864-7692.

Blood Lead Level (µg/dL)	Time Frame For Initial Home Visit
15-19	Within 2 two weeks of referral
20-44	Within 1 week of referral
45-70	Within 48 hours of referral
≥ 70	Within 24 hours of referral

*Where lead levels 10-14 µd/dL it may not be feasible to make home visits with time constraints of local health departments. It is still important that educational materials are mailed to the child's caregiver and the child's lead level is closely monitored to ensure the lead level does not increase.

Coordination of Care by the Case Manager

The case manager is responsible for coordinating care and ensuring that all team members, including the caregiver, stay in communication and work together. Such communication includes verbal consultations with written summaries of progress for team members. Case managers need not directly provide all follow up care, but they are responsible for seeing that the needed care is provided, including medical follow up.

Case Closure

<u>Routine Cases</u>

At least one of the following must be met:

- ✓ Two consecutive venous blood lead levels below 10 µg/dL.
- ✓ Child reaches age 6 years and venous blood lead levels have not varied over 5 to 10µg/dL in one year.

A letter should be sent to the caregiver explaining that the child's lead level has reached an acceptable level and the local health department will no longer provide follow up care coordination. See Appendix B for sample letter.

Non-Compliant Cases

All attempts need to be made to contact the caregiver; more intense follow up efforts are encouraged as time and staff permits.

- Contact Child Protective Services (CPS) if a family is not being responsive to follow up services. Not complying with requests for an environmental investigation or keeping follow up testing appointments can be classified as child neglect and CPS should be notified of the situation.
- Document three attempts to contact the family with no response (letters sent, home visits, failure of three consecutive lead clinic or venipuncture appointments).
- Review by the nurse supervisor of all potential closures of lead cases is required. Call the Follow-up Coordinator for the Lead-Safe Virginia Program for assistance. (804) 864-7692 or 877-668-7987. Closure of any case with venous blood lead levels of 30µg/dL or higher must be discussed with and signed off by nursing supervisor.

Role of the Local Health Department

The role of the local health department is to serve as the case manager for any child less than 72 months with an elevated blood lead level ≥ 10µg/dL. Once a case is reported to their locality through 1) Epi-1 Form from a physician's office, 2) ELR from NEDDS, or 3) referral from the state Lead-Safe Virginia Program, the case should be opened for case management.

For guidance for follow up refer to the 2) *Disease Control Manual* at the Office of Epidemiology at VDH or 2) *Follow Up Flow Chart.* See Appendix B for copies of both documents.

Role of the State Health Department

The role of the state health department is to refer reported cases to the local health departments and assist in follow up care coordination. The health department can assist with educational materials, general information, referrals, and technical support with environmental investigations. You can call the Virginia Department of Health, Lead-Safe Virginia Program's toll free line at 877-668-7987, direct line at 804-864-7698, or visit on the Web at www.vahealth.org/leadsafe.

Role of the Primary Care Provider

Virginia health care providers should test all children up to and including 72 months of age for elevated blood lead levels according to the following schedule unless they are determined at low risk for elevated blood lead levels.

1. Children should be tested at ages one and two years.

2. Children from 36 through 72 months of age should be tested if they have never been tested or if new potential risk factors are noted.
3. Additional testing may be ordered by the health care provider.
4. Parents may request their child be tested per regulations.
5. Provide educational information on lead poisoning prevention at all well child physicals.

Physicians are required to test all Medicaid enrolled children at the ages one and two years of age. Physicians are responsible to report lead test results ≥ 10µg/dL via Epi-1 Form or via laboratory submission. The Regulations for Disease Reporting and Control (Title 12 VAC 5-90-80) require that reports must be forwarded to the local health departments in writing within three days of evidence, suspicion or confirmation of the disease.

Physicians should work collaboratively with the local and state health departments. Physicians should follow the Department of Health requirements and recommended guidelines (Chapter 3) for follow up testing for children with confirmed elevated blood lead levels, provide or recommend appropriate information for parents, and disseminate the protocol and other information to relevant health care professionals.

General Considerations

There are several guiding principles to consider when making recommendations for children with EBLLs.

1) Interventions should be directed at children whose risk for lead exposure is high.
2) Where possible, interventions should be targeted at children less than two years of age because:
    a. Occurrence of neurotoxicity is more prevalent
    b. Lead exposure is more likely to result in a rapid increase in BLLs in very young children.
3) When intervention recommendations are based on tenuous data or on expert opinion, case managers and other involved professionals should more that ever remember *primum non nocere* (first, do no harm). Many children with EBLLs come from economically disadvantaged families who may have difficulty meeting the daily challenges of life and may be overwhelmed if presented with a long list of interventions. Studies show interventions regarding behavior change recommendations usually have only a modest effect at best in combating other childhood problems (injury prevention, dietary counseling).
4) Focusing on the most important recommendations designed to eliminate environmental lead hazards, and assisting caregivers in implementing them may achieve better results.
5) Encouraging and supporting families without making them feel guilty for their child's EBLL or making unrealistic demands on them may offer the greatest benefit to the child.

Chapter 4

Medical Management

Chapter 4 – Medical Management

Background

Prior to the development of programs aimed at screening children for EBLLs, lead exposure was generally not detected until a child presented with symptoms of lead toxicity. Neurological findings associated with acute encephalopathy (lethargy, ataxia, seizures, papilledema, and coma) were often the first signs of an EBLL, and children with these symptoms required immediate hospitalization and treatment. Encephalopathy could result from a BLL >70 µg/dL and could develop without prior symptoms. Among children with BLLs exceeding 150 µg/dL, laboratory abnormalities often included phosphaturia, proteinuria, aminoaciduria, glucosuria, and hypophosphatemia.

Today such presentations are rare. Children with EBLLs usually have BLLs below 30 µg/dL, and few BLLs exceed 50 µg/dL. Most children with EBLLs have no symptoms. Patient management now focuses on reducing children's exposure to lead and decreasing their BLLs, whether they have symptoms of lead toxicity or not. What follows is a guide to the basic standards and principles of medical management. It is not intended for use as a complete protocol but rather as a tool for adapting management to local needs and conditions.

Medical History

Although abdominal pain, vomiting, constipation, change in appetite, and irritability have been described in association with EBLLs, they are seldom caused by BLLs less than 40 µg/dL, and other causes for such symptoms should be sought.

A child's environmental history can provide information about the child's possible exposure to residential and other sources of lead. If a child's BLL remains elevated despite lead hazard reduction, less common sources should be considered. Because a child may be exposed to lead from multiple sources, identifying one source may not be sufficient to eliminate all lead exposure. Repeated history taking by different members of the management team is often required. Because knowledge about the lead sources in a community and the prevalence of EBLLs in specific geographic areas of the community can be useful in determining sources of exposure, the interpretation of a child's environmental history may require consultation with lead experts.

Guidelines for Questions Regarding a Child's Environmental History

<u>Paint and soil exposure</u>

What is the age and general condition of the residence?
Is there evidence of chewed or peeling paint on woodwork, furniture, or toys?
How long has the family lived at that residence?
Have there been recent renovations or repairs in the house?
Are there other sites where the child spends significant amounts of time?
What is the character of indoor play areas?

Do outdoor play areas contain bare soil that may be contaminated?
How does the family attempt to control dust/dirt?

Relevant behavioral characteristics of the child

To what degree does the child exhibit hand-to-mouth activity?
Does the child exhibit pica?
Are the child's hands washed before meals and snacks?

Exposures and behaviors of household members

What are the occupations of adult household members?
What are the hobbies of household members? (Fishing, working with ceramics or stained glass, and hunting are examples of hobbies that involve risk for lead exposure.)
Are painted materials or unusual materials burned in household fireplaces?

Miscellaneous questions

Does the home contain imported vinyl mini-blinds, or mini blinds purchased before 1997?
Does the child receive or have access to imported food/spices, cosmetics, or folk remedies?
Is food prepared or stored in imported pottery or metal vessels?

Physical Examination

Children evaluated as a consequence of a screening EBLL most often have no physical findings specific for lead toxicity. Gingival lead lines are rarely seen in clinical practice and are of no use in the diagnosis and management of children with EBLLs. Pallor, papilledema, and other neurologic findings suggestive of acute encephalopathy would not be expected.

A thorough evaluation of all children with BLLs ≥ 20 µg/dL is recommended for three reasons. First, it will allow PCPs to ascertain whether children with such EBLLs have any findings suggestive of encephalopathy. The BLL threshold for encephalopathic findings is believed to be 70 µg/dL, although encephalopathy is usually associated with much higher BLLs. Second, it will allow PCPs to assess whether children with EBLLs are engaging in at-risk behaviors such as pica and hand-to-mouth activity. Finally, it will allow PCPs to identify behavioral and neurodevelopmental disorders, such as distractibility, aggression, or speech delay. If a child has any of these findings, regardless of their etiology, the PCP should, when appropriate, refer the child for a further evaluation.

Laboratory, Radiology, and Other Testing

Among asymptomatic children, most clinical laboratory results other than BLLs will be normal and therefore will not be of assistance in case management. However, all children should have a hemoglobin or hematocrit test performed, as anemia is associated with EBLLs. That iron deficiency rather than lead is the cause of such anemia does not diminish the need for follow-up. PCPs may wish to assess children's iron stores by one or more of a variety of laboratory tests. Iron deficiency may delay children's neurodevelopment independently of the effects of lead.

Because basophilic stippling is not specific for lead toxicity, a peripheral blood smear is of limited use in the hematologic evaluation.

The inhibition of heme synthesis leads to the accumulation of excess porphyrins, particularly protoporphyrin IX in red cells. The fluorescence of these porphyrins has led to the development of methods to detect extracted porphyrins—free erythrocyte protoporphyrin (FEP) or erythrocyte porphyrin (EP) testing—and to the observation of zinc protoporphyrin (ZPP) in red cells. Because the relationship between the results of these tests and BLLs is log-linear, these tests can be used to evaluate and follow children with very high BLLs. However, the results are confounded by concomitant iron deficiency and show poor correlation with BLLs ≤ 25 µg/dL. Therefore, EP tests should be used infrequently except in evaluating children with BLLs well above 25 µg/dL whose BLLs do not show a steady decline in response to medical and environmental interventions. In such situations, these measures may assist PCPs in differentiating BLL rebound after treatment from the effects of re-exposure.

While very high BLLs have been associated with serious to severe renal tubular dysfunction, there is no evidence to support routinely evaluating the renal status of children with presymptomatic BLLs. However, if potentially nephrotoxic chelating agents such as EDTA are to be used in treatment, renal function testing is appropriate prior to and during therapy.

Abdominal radiographs may be useful in determining whether children are currently ingesting lead-contaminated non-food items, including paint chips. They are particularly useful when children have an unexpected acute rise in BLL or are not responding to case management as expected. Long-bone films for the presence of growth arrest lines ("lead lines") may be of interest but rarely provide information useful for a child's case management. Lead lines are not present unless BLLs exceed 50 µg/dL and are indicative of chronic exposure. Also of no documented utility in the management of children with EBLLs are hair, fingernail, and tooth (dentin) lead measurements. Hair and fingernails are subject to external contamination, therefore are not reliable tests for lead exposure.

A few studies have demonstrated alteration of neurophysiologic function (i.e. postural sway, auditory evoked potentials, nerve conduction) with BLLs observed today. However, further research is needed to define normative standards and determine individual variation and clinical significance. Until then, such measures are of little use in the diagnosis or management of an individual child. X-ray fluorescence of long bones uses a radioactive source to provide non-invasive estimation of lead in bone. It is insufficiently standardized, and results show significant inter-laboratory variation.

Chelation Therapy

While chelation therapy is considered a mainstay in the medical management of children with BLLs > 45 µg/dL, it should be used with caution. Primary care providers should consult with an expert in the management of lead chemotherapy prior to using chelation agents (i.e. local poison control center). The 24/7 Virginia Provider Hotline is 866-767-5323 (866-SOS-LEAD). A child with an EBLL and signs or symptoms consistent with encephalopathy should be chelated in a center capable of providing appropriate intensive care services. Controversy exists as to the appropriate level at which to initiate chelation therapy, and which drugs are most appropriate. Chelation is not recommended for levels < 45 µg/dL (Walter RJ, Dietrich KN, Ware JH: The

Effect of Chelation Therapy with Succimer on Neuropsychological Development in Children Exposed to Lead. NEJM 2001, 344:1421-1426).

Monitoring Blood Lead Levels

Measurement of BLLs is the main method of determining whether significant absorption of lead has occurred, how urgently intervention is needed, and how successful medical management has been. When a child's BLL does not fall within a reasonable amount of time, it is the responsibility of the health care team to determine the cause of failure. The rate of BLL decrease can depend on both the amount of lead in the child's body and the duration of the BLL elevation. A course of chelation therapy with succimer results in a rapid fall in BLL after 1 week of treatment. However, BLLs of those treated rebound after treatment ends, and by approximately 7 weeks after an initial course of therapy, BLLs of treated patients may reach almost 75% of prechelation levels. The CDC recommends rechecking children's BLLs at 7 to 21 days after completion of chelation therapy. A continuing increase in children's BLLs above the rebound level during the follow-up period may indicate continuing or possibly increased exposure to lead and definitely indicates a need for further environmental investigation. Common causes of rising BLLs include failure to address hazards in the child's environment, improper environmental lead abatement techniques, and continued use of imported pottery, cosmetics, or folk medicines that are contaminated with lead.

Any screening BLL ≥ 10 µg/dL must be confirmed, and a venous specimen is required for BLLs ≥ 15 µg/dL. The time frame for confirmation depends upon the initial BLL (See Chapter 2). In general, the higher the screening BLL, the sooner the confirmatory test. However, if a child is less than 12 months old, or if there is reason to believe that the BLL is rising rapidly, an earlier diagnostic confirmation should be obtained within 30 days. See Appendix B for "Recommended Follow up Time Frames".

Local Health Departments

Children needing a blood lead test should be entered into Web VISION to determine Medicaid eligibility and an application for both Medicaid and FAMIS should be completed if needed. Many health departments provide a sliding fee schedule for those without insurance or with high deductibles. These samples are then sent to private laboratories for analysis.

The Division of Consolidated Laboratories (DCLS) will accept venous lead samples on children under the age of 36 months that do not qualify for Medicaid or FAMIS. Prior authorization from DCLS may also allow testing on child/children from a family where testing fees are a hardship (i.e. very high deductible on insurance or no coverage for testing). See Appendix C for Medicaid Memo: EPDST Blood Lead Testing, Lead Safe Virginia, and the discontinued use of the Division of Consolidated Laboratories.

Nutrition

<u>Iron</u>

Although iron may help prevent lead absorption in animals, studies of the association between iron deficiency and BLLs in children have produced inconsistent results. There is little evidence

that iron promotes a clinically important increase in lead excretion. However, the use of iron supplements among children with EBLLs and iron deficiency has been shown to improve their developmental scores, suggesting that the effects of iron deficiency on cognition can be partially reversed among children with EBLLs. This finding is consistent with a wealth of data indicating that neurodevelopmental impairment among children with iron-deficiency anemia can be partially resolved by treatment with iron supplements. Since the effects of iron deficiency on children's development appear to be independent of the effects of lead, there is no compelling reason to screen and treat children with lead exposure differently from children of similar age on the basis of their risk for iron deficiency, assessed independently of their lead exposure.

Vitamin C

Although there is fairly strong evidence to support giving vitamin C to adults with EBLLs, there is insufficient evidence to recommend for or against vitamin C supplementation for children with EBLLs. It is important to note that CDC recommends giving all children 6 months and older at least two servings of foods rich in vitamin C per day for the prevention of iron deficiency.

Calcium

There is little evidence that a child typically considered at high risk for lead exposure is at greater risk for low calcium intake than children without EBLLs. However, because of the frequency of inadequate calcium intake among all children, it is important to verify that a child with an EBLL is receiving enough calcium. The results of both animal studies and human laboratory studies provide good evidence that dietary calcium competitively inhibits lead absorption.

Total fat intake

The link between fat intake and BLLs comes primarily from animal experiments. In one cross-sectional experimental study, researchers found a direct association between dietary fat and BLLs; however, no such relationship between dietary fat and BLL was found in NHANES II. Thus, no strong case can be made for decreasing children's total fat intake. In addition, dietary fat is an important constituent in the diets of children under 2 years of age because calories from fat support high calorie requirements for growth during this period. Thus, we do not recommend low-fat diets for the treatment of younger children with EBLLs.

Zinc

Some evidence from animal studies suggests that high levels of dietary zinc inhibit the absorption and retention of lead in animals. However, in one small clinical study in which zinc was given with and without vitamin C to lead-exposed workers, the zinc had no demonstrable effect on their BLLs. As with calcium, the CDC does not recommend adding zinc supplements to the diet of children with EBLLs.

Neurodevelopmental Deficits

Overview

Several older case series clearly demonstrate that children presenting with symptoms and findings of severe lead intoxication are at substantially increased risk for serious neurological sequelae. Asymptomatic children with EBLLs also may suffer a variety of neurologic and neurobehavioral adversities. Recent epidemiological studies provide a wealth of data on the nature of the dose-effect relationship for children with BLLs below 35 µg/dL. The relationship between children's BLL and IQ appears to be linear, even at BLLs below 10 µg/dL. Some data suggest, however, that the slope for the dose-effect relationship is steeper for BLLs below 15 µg/dL than it is for levels above 15 µg/dL. Meta-analyses of the results of several studies indicate that an increase in average postnatal BLL from 10 to 20 µg/dL is associated with a decrease of 1 to 3 points in the child's IQ measured at age 5 or older. The overall weight of evidence clearly supports the existence of an inverse association between children's BLLs and their IQ scores.

Children presenting with severe symptomatic lead intoxication are known to suffer from neurobehavioral problems such as impulsivity, aggression, and short attention span. Results of a number of studies support the hypothesis that the spectrum of low-level lead effects on children includes neurobehavioral problems. At present, there is no compelling evidence that an EBLL increases a child's risk for attention deficit hyperactivity disorder. However, because the studies mounted to address this question have been cross-sectional or retrospective, children's lead exposure status at earlier developmental periods may have been misclassified. It is noteworthy that elevated blood or tooth lead levels have been repeatedly linked to the types of behavioral problems pertinent to the diagnosis of attention deficit disorder inattentive subtype, a diagnosis included for the first time in the fourth (and most recent) edition of the Diagnostic and Statistical Manual of Mental Disorders. These behaviors include distractibility, poor organization, a lack of persistence, and daydreaming. Elevated bone lead levels have also been linked to an increased risk of engaging in antisocial behaviors in middle childhood.

Efforts to identify a "neurobehavioral signature" for children with EBLLs have generally been unsuccessful, although several studies have found that among preschool children, EBLLs were most strongly associated with deficits in nonverbal functions, particularly visual-motor skills. However, the nature of the deficits identified when children reach school age is less consistent. It is likely that the manner in which lead toxicity is expressed depends on many factors, including the timing and chronicity of exposure, the child's age when outcomes are assessed, and the context of the assessment. Given the absence of specificity in the findings associated with an EBLL, a child's specific deficits are of little use in making a diagnosis of past or present EBLL.

The BLLs at which individual children show signs of clinical lead intoxication vary widely, and despite the consistent inverse association between children's BLL and IQ, children have varying sensitivity to the more subtle functional impairments associated with EBLLs. Although, on average, children with higher BLLs tend to score lower on IQ tests than do children with lower BLLs, some children seem to be more affected than others by a given lead dose. This suggests that not all children with a given BLL should be considered at equivalent neurodevelopmental risk. In other words, an EBLL should be viewed as a risk factor for neurodevelopmental problems, not a diagnosis.

For the most part, the evidence from prospective studies regarding the time course of the association between a child's BLL and neurodevelopment is consistent with a lag effect. It is much more common to find a significant association between children's previous BLLs and their current neurodevelopmental status than between their current BLLs and current developmental status. This pattern is less clear under circumstances in which children's BLLs remain elevated for extended periods of time, such as when they live near smelters or in hazardous housing; under such conditions, children's current and past BLLs tend to be strongly correlated. The lag may be the result of a toxicological process in which some period of time is required for past lead exposure to affect the central nervous system function. Another explanation is that lead may primarily affect higher-order neurodevelopmental processes that are best tested at later ages when children's response modalities are more highly differentiated. One implication of this lag is that neurodevelopmental assessments conducted when a child has an EBLL may produce many false-negative results and fail to identify a child who is at risk for later neurodevelopmental dysfunction. Careful long-term surveillance of behavior and neurodevelopment is thus needed to ensure that such children are identified.

The effects of EBLLs on the skills required for academic success may not be appreciated until a child reaches critical transition points in school:

1) First grade, when children are expected to begin acquiring basic academic skills such as reading words or performing arithmetic operations.

2) Fourth grade, where the emphasis begins to shift from acquiring basic skills to using those skills to learn new material ("reading to learn" as opposed to "learning to read").

3) Sixth or seventh grade, when students are expected to use higher-order planning and organizational skills in order to complete long-term projects. Increased BLLs have been associated with difficulties with all three types of skills.

Results from a variety of studies indicate that neurodevelopmental problems associated with elevated postnatal BLLs are persistent. The natural history of these problems appears to correspond to a "constant decrement" model, with the deficits associated with higher BLLs neither increasing nor decreasing over time, although few data are available on the persistence of effects. In contrast, the findings from most of the prospective studies are consistent with the hypothesis that neurodevelopmental effects associated with elevations in biomarkers of prenatal lead exposure attenuate during a child's early years of life.

Increased exposure to lead frequently occurs in the context of other factors that also place a child at increased neurodevelopmental risk (e.g., poverty, single-parent household, teen-age mother, child abuse, poor nutrition). From this perspective, lead represents an additional "hit," adding to a child's cumulative neurodevelopmental risk. In multivariate statistical models, children's BLLs tend to account for a relatively small amount of the variance in their neurodevelopmental status. The amount varies across outcomes measured and across studies, ranging from 0% (i.e., accounting for no variance in neurodevelopmental measurements) to as much as 11%, although usually on the order of 1% to 3%. For instance, in the set of cross-sectional studies included in the meta-analysis of Needleman and Gatsonis, children's BLLs accounted for 2.3% of the variance in their IQ scores (based on a weighted partial correlation of –0.152). Other factors,

particularly social class and parental intelligence, typically account for much larger percentages of outcome variance.

Some evidence suggests that certain characteristics of children and their families are associated with the children's increased risk for neurodevelopmental impairments from a given level of lead exposure. Several studies, although not all, have identified family social class as one such characteristic, with children from lower social strata appearing to express the neurodevelopmental effects of lead at a lower BLL. A sex difference is also sometimes found, although in some studies it is girls and in others it is boys who are found to be at greater risk. One implication of these findings is that lead's association with children's neurodevelopment cannot be accurately expressed as a single number because the magnitude of the association may vary depending on the characteristics of a particular child and his or her environment. A more promising implication, however, is that the effects of lead on a child might be reduced by modifying critical aspects of the environment. For example, indirect observational evidence indicates that the persistence of the link between an EBLL and reduced function varies with factors such as family social class, maternal IQ, and quality of the home environment. Specifically, if two children with the same early BLL achieve the same developmental score at time 1, but one child's environment offers greater cognitive stimulation, that child's developmental status at time 2 is likely to be better than that of the child from the less stimulating environment. Thus certain factors might help children to weather the developmental insult of early lead exposure, either preventing neurodevelopmental effects from being expressed or facilitating subsequent recovery of function. Social class is often found to be such an effect modifier, although higher social class is presumably a surrogate for the more proximal influences that confer this greater resilience (e.g., better nutrition, greater access to academic supports, more varied experiences).

General Recommendations

The developmental and behavioral screening that PCPs conduct at well-child visits, including taking a clinical history and administering brief instruments such as the *Ages & Stages Questionnaires (ASQ); A Parent-Completed, Child-Monitoring System* may be sufficient to identify children who are failing to make age-appropriate progress and transitions and who thus require additional diagnostic evaluation. The usual absence of associations between concurrent BLLs and risk for neurobehavioral deficits among children aged 0 to 3 years suggests that neurodevelopmental assessment of children while they have an EBLL might not identify children who will later experience cognitive problems (false-negatives). If a child currently has or has ever had an EBLL, however, the PCP should take a more aggressive approach in assessing that child's neurodevelopment and referring that child for follow-up. **An EBLL makes the child "at risk" for developmental delay. These children should be screened using a standardized tool like the ASQ. Under ordinary circumstances, the PCP is in the best position to follow up with long-term monitoring of a child with an EBLL.** See Appendix C for Medicaid Memo: Recommended Developmental Screening Tools for Well-child and EPDST Visits.

Kindergarten-readiness evaluations generally are not designed to identify vulnerabilities that may be expressed as serious academic problems once children enter school. Because they produce many false negatives, these kindergarten evaluations are not sufficiently sensitive to identify potential lead-associated learning difficulties.

Age is an inappropriate criterion for determining which children with EBLLs need referral for developmental evaluation. The neurodevelopmental effects of EBLLs are persistent and may be delayed. Also, there is no way of knowing how long a child may have had an EBLL. A child first identified as having an EBLL at age 4 might well have also had an EBLL at age 2 or 3 and, on the basis of a presumed chronic exposure, could be regarded as being in greater need of developmental assessment than a child with an EBLL at age 2. Because detailed information about children's blood lead history is often not available, a child of any age who is found to have a BLL of 20 µg/dL or greater should be placed under increased surveillance in order to identify any emerging neurodevelopmental problems as early as possible.

Local Health Departments

Local health departments can access the *Ages and Stages Questionnaires (ASQ): A Parent-Completed, Child-Monitoring System* at the Office of Family Health, Division of Child and Adolescent Health's internal Web site.

Glossary

Glossary

BLL - blood lead level, usually measured in micrograms per deciliter (μg/dL).

CDC - Centers for Disease Control and Prevention; part of the U.S. Department of Health and Human Services, Public Health Service.

EBLL - elevated blood lead level, defined as any blood lead level > 10 (μg/dL.
Environmental investigation - an investigation by trained personnel at a child's residence (or any secondary addresses where the child spends significant amounts of time) to identify lead hazards.

Gingival lead lines - darkening of the gums just distal to the insertion of the tooth.

HUD - U.S. Department of Housing and Urban Development.

μg/dL - micrograms per deciliter, the usual unit of measure for blood lead levels.

$\mu g/ft^2$ - micrograms per square foot, a unit of measure for measuring dust lead loading.

PCP - primary care provider, the health professional who oversees a child's care, usually a physician, nurse practitioner, or physician's assistant.

ppb - parts per billion.

ppm - parts per million.

Primary prevention - preventing a problem before it occurs. Primary prevention of lead poisoning would eliminate lead sources, thus preventing exposure.

Refugee - A special group of immigrants who are admitted into the United States because of persecution or a well-founded fear of persecution on account of race, religion, nationality, membership in a particular social group, or political opinion. These individuals enter the United States legally as a refugee pursuant to Section 207 of the Immigration and Naturalization Act. For the most part, refugees cannot return home because of the danger they would face upon returning.

Secondary prevention - responding to a problem after it has been detected. Secondary prevention of lead poisoning involves identifying children with EBLLs and eliminating or reducing their lead exposure.

WIC - Special Supplemental Nutrition Program for **W**omen, **I**nfants, and **C**hildren. WIC is a federal program for low income pregnant, postpartum and breastfeeding women, infants and children until the age of five and provides supplemental foods, nutrition education, breastfeeding support, and referrals for health care. This Program is effective in preventing and improving nutrition-related health problems within its population.

Contacts

Information and Resources

Contact Information and Resources

Virginia Contact Information

Lead Safe Virginia Program, Virginia Department of Health
1-877-668-7987
Director: 1-804-864-7694
http://www.vahealth.org/leadsafe/

University of Virginia Center for Clinical Toxicology
1-866-SOS-LEAD or 1-866-767-5323
http://www.healthsystem.virginia.edu/internet/medtox/home.cfm

Education for Health Care Professionals
http://www.leadpoison.org/

Virginia Code and Regulations

Code of Virginia §32.1-46.1. Establishes protocols for identifying children with elevated blood-lead levels. And § 32.1. Reporting and Control of Disease
http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+32.1-46.1

12 VAC 5-120: Regulations for testing children for elevated blood-lead levels.
http://register.dls.virginia.gov/

National Lead Contacts and Resources

Agency for Toxic Substances & Disease Registry
http://www.atsdr.cdc.gov/tfacts13.html

American Academy of Pediatrics' Position Statement on Lead Screening
http://aappolicy.aappublications.org/cgi/reprint/pediatrics;101/6/1072.pdf

American Academy of Pediatrics' Position Statement on Lead Levels < 10 ug/dL
http://pediatrics.aappublications.org/cgi/content/full/120/5/e1285

CDC Case Management Manual
http://www.cdc.gov/nceh/lead/CaseManagement/caseManage_main.htm

CDC Lead Poisoning Prevention Program
http://www.cdc.gov/nceh/lead/

Consumer Product Safety Commission Hotline
1-800-638-2772
Consumer Product Safety Commission
www.cpsc.gov

Consumer Action Guide to Toxic Chemicals in Toys
www.healthytoys.org

EPA Lead Page
www.epa.gov/opptintr/lead/index.html

EPA Safe Drinking Water Hotline
1-800-426-4791
EPA Lead in Drinking Water
http://www.epa.gov/safewater/lead/

EPA National Lead Information Center
http://www.epa.gov/opptintr/lead/pubs/nlic.htm

Pediatric Environmental Home Assessment:
Tools for Public Health and Visiting Nurses
http://www.healthyhomestraining.org/Nurse/PEHA.htm

HUD Hotline (National Housing and Urban Development)
1-800-RID-LEAD (743-5323)
www.hud.gov/offices/lead

National Center for Lead Safe Housing
410-992-0712
http://www.cehn.org/cehn/resourceguide/nclsh.html

National Center for Healthy Housing
http://www.nchh.org/

National Safety Council
http://www.nsc.org/resources/issues/lead.aspx

Appendices

Appendix A

Guidelines for Childhood Lead Poisoning in Virginia

VIRGINIA
Guidelines for Childhood Lead Poisoning Testing

ALL MEDICAID ENROLLED CHILDREN ARE REQUIRED TO BE TESTED AT 1 AND 2 YEARS OF AGE

To determine risk for other children, please use the chart below.

OTHER RISK FACTORS FOR CHILDREN

Blood lead levels shall be obtained in children at ages 1 and 2 if they meet ANY one of the criteria noted in the box below. In addition, children ages 3-5 years of age who have not previously been tested, and moved to a new address in a high-risk area, or meet ANY one of the criteria in the box below shall also be tested.

1. Eligible for or receiving WIC benefits? Medicaid eligible and not tested at both 1 and 2 years of age?
2. Living in a ZIP Code determined to be high-risk based on age of housing and other factors? (See attached High – Risk ZIP Code list)
3. Living in or regularly visiting a house or day care center built before 1950?
4. Living in or regularly visiting a house built before 1978 with peeling or chipping paint or recent (within the last 6 months), ongoing or planned renovation?
5. Living with or regularly visiting a sibling, housemate or playmate with lead poisoning?
6. Living with an adult whose job or hobby involves exposure to lead?
7. Living near an active lead smelter, battery recycling plant, or other industry likely to release lead?
8. Recent refugee, immigrant, or child adopted from outside of the U.S.

- Take careful history regarding possible lead exposure at each routine visit.
- A child must be tested if the parent or guardian requests testing due to possible exposure (12 VAC 5-120).
- Testing may be performed by venipuncture or capillary. Filter paper methods are also acceptable and often more convenient for the family if performed in the provider's office. The use of a CLIA-waived lead testing device must be approved through the Lead-Safe Virginia Program at 804-864-7694 to assure proper quality assurance and reporting of data.

CONFIRMATION OF TESTING RESULTS

If result of capillary Testing test (□g/dL) is:	Perform diagnostic test on venous blood *within:*
10-19^	Repeat blood test within 30 days to assure lead level is not rising Before 3 months
20-44	7-30 days (The higher the screen, the sooner the diagnostic test should be performed.)
45-59	48 hours
60-69	24 hours
≥70	Immediately as an emergency lab test

Note: Confirm elevated capillary blood lead levels ≥10 μg/dL. A 'confirmed' elevated blood lead level (EBLL) is defined as a single elevated venous test ≥ 10 μg/dL or two elevated capillary tests within 84 days/12 weeks. A venous sample is required for environmental investigations and medical management. Virginia regulations require reporting of blood lead levels ≥10 μg/dL (using the Epi-1 form) to the Office of Epidemiology. Regulations 12 VAC 5-120 require all CLIA approved laboratories and point of care providers using CLIA-waived devices to report all blood lead tests on children under the age of six within ten days of analysis.

MANAGEMENT OF CHILDREN WITH CONFIRMED ELEVATED BLOOD LEAD LEVELS

BLOOD LEAD LEVEL (μg/dL)	ACTION (Case manager assures coordinated action and follow-up)	TIME FRAME (Begin intervention)
10-14	• Provide caregiver lead education: dietary and environmental • Follow-up blood lead testing within 30 days to assure not rising • Refer for WIC and social services, if needed	Within 30 days
15-19	• Above actions, plus: • Proceed according to actions for 20-40 ug/dL if: A follow-up blood lead is 15 or above, **or** the blood lead level is increasing	Within 2 weeks
20-44	• Above actions, plus: • Provide coordination of care (case management) • Provide environmental investigation and control lead hazards	Within 1 week
45-69	• Above actions	Within 48 hours
70 and above	• Above actions, plus: • Hospitalize child and begin medical treatment (chelation therapy as appropriate) immediately. • Contact Emergency Lead Healthcare line below.	Within 24 hours

Current CDC management recommendations adapted from *Managing Elevated Blood Lead Levels Among Young Children: Recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention.* (CDC, 2002).
* Investigations may be required where babies or multiple children in a household have elevated blood lead levels. Follow –up care is described in more detail in the VDH "Care Coordination Manual: Children with Lead Poisoning in Virginia".

Emergency Lead Healthcare Information Line

TOLL FREE EMERGENCY **(866) 767-5323**
(866) SOS-LEAD

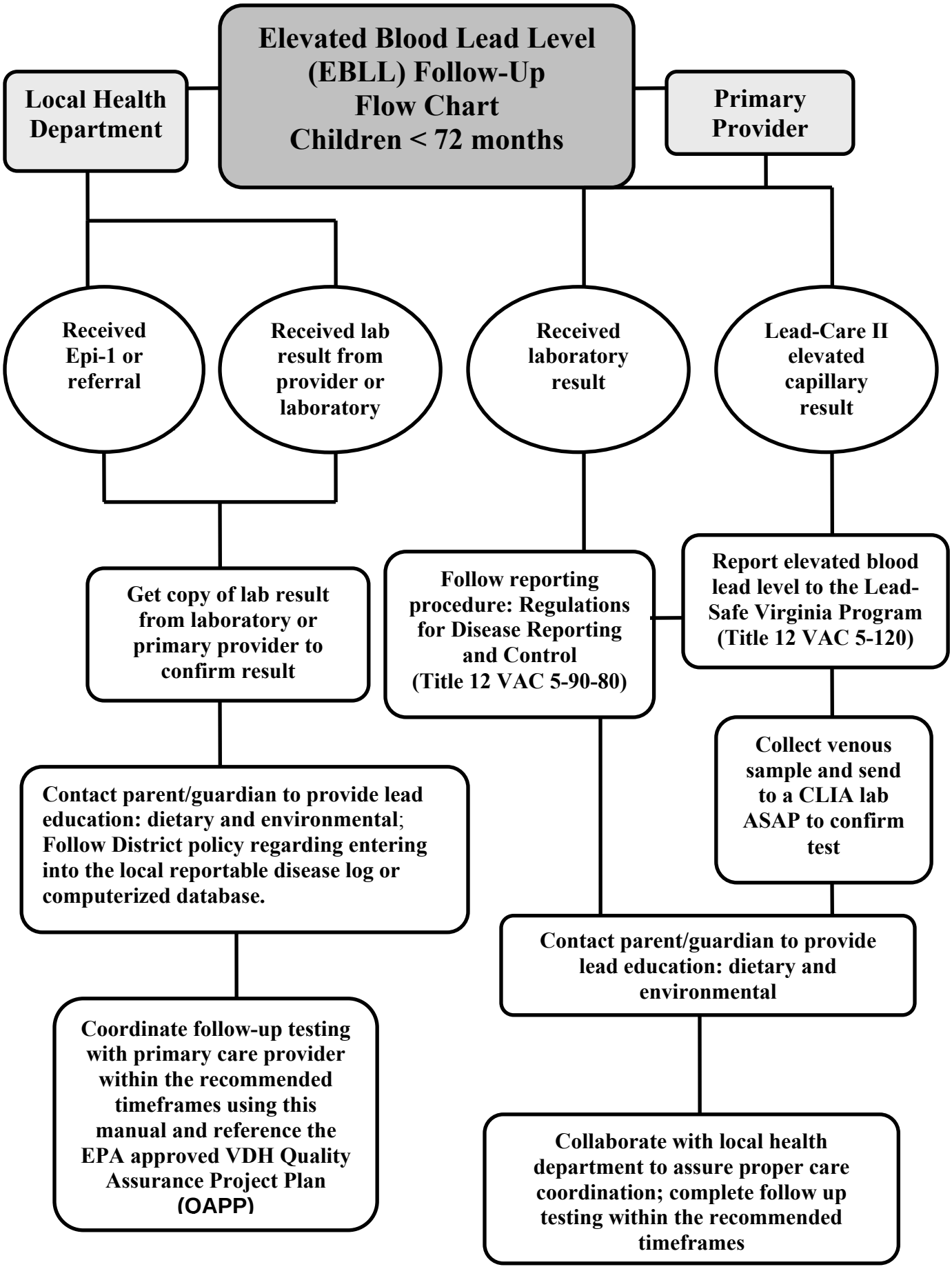
Note: For questions related to your local area, refer to your local health department. Local health policy and lead ordinances may have additional requirements. Richmond City has a lead ordinance that requires an investigation at 10 ug/dL.

Developed by the Virginia Department of Health Lead Elimination Plan Medical Committee, following CDC Guidelines and Virginia Regulations. Funded by the Centers for Disease Control and Prevention and the Virginia Department of Health.

Revised May 2009.

Appendix B

Follow-up Protocol


Elevated Blood Lead Level (EBLL) Follow-Up Flow Chart Children < 72 months
Local Health Department
Primary Provider
Received Epi-1 or referral
Received lab result from provider or laboratory
Received laboratory result
Lead-Care II elevated capillary result
Get copy of lab result from laboratory or primary provider to confirm result
Follow reporting procedure: Regulations for Disease Reporting and Control (Title 12 VAC 5-90-80)
Report elevated blood lead level to the Lead-Safe Virginia Program (Title 12 VAC 5-120)
Collect venous sample and send to a CLIA lab ASAP to confirm test
Contact parent/guardian to provide lead education: dietary and environmental; Follow District policy regarding entering into the local reportable disease log or computerized database.
Contact parent/guardian to provide lead education: dietary and environmental
Coordinate follow-up testing with primary care provider within the recommended timeframes using this manual and reference the EPA approved VDH Quality Assurance Project Plan (QAPP)
Collaborate with local health department to assure proper care coordination; complete follow up testing within the recommended timeframes

LEAD POISONING ASSESSMENT FORM

THIS ASSESSMENT WILL BE USED FOR THREE PURPOSES: 1) DETERMINE WHERE ENVIRONMENTAL SAMPLES SHOULD BE COLLECTED 2)IDENTIFY LEAD EXPOSURE SOURCES 3)DEVELOP INTERVENTIONS TO REDUCE THE CHILD'S EXPOSURE TO LEAD HAZARDS

Interview type: In person_____ By phone_____ Date:_____

Check: _____Primary address _____Related

I. DEMOGRAPHIC AND MEDICAL INFORMATION

1. Child's name: _____ 2. Date of birth: ___/___/___
Last First MI

3. Blood lead level:_____ 4. Type: Venous___ or Capillary___ 5. Test date: ___/___/___

6. Name of person interviewed: _____

7. Relationship to child: _____Mother_____Father_____ Legal Guardian____Other (specify) _____

8. Primary address:

_____
Street/number City ZIP Code

9. Telephone: Home:_____ 11. Work: _____

10. Child's length of time at residence:_____

11. If < 6 months, prior address:

_____
Street/number City ZIP Code

12. Private medical doctor:

_____

13. Insurance: Company and policy #:_____

14. Is the child enrolled in WIC? __ Yes ___No

15. Is the child enrolled in Medicaid? __Yes___No

16. What other addresses does the child visit? (Include: relatives, friends, neighbors, child care facility, babysitters)

_____
Street/number City ZIP Code

_____
Street/number City ZIP Code

_____
Street/number City ZIP Code

17. Does the child exhibit any of the symptoms below? ___None _____constipation _____vomiting _____tiredness _____stomach pain _____ pica

Other specify:_____

18. Date symptoms first noticed: ___/___/___

19. Child's race: ___Black ___Caucasian ___Asian/Pacific ___America Indian/Alaskan Native
Other (Specify) _____

20. Child's Ethnicity: ___Hispanic ___Non-Hispanic

21. Is the child a recent immigrant, refugee, or international adoptee? __ Yes __No
If yes, country of origin_____ How long in the U.S. _____

22. Number of children in household: _____ Under six years old: _____

	Name	Date of birth	Tested for lead?	Results
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____

I. ENVIRONMENTAL LEAD SOURCES

1. General observation of dwelling unit: _____
Overall upkeep of interior: _____ Good _____Fair ____Poor
Housekeeping practice: _____Good _____Fair _____Poor
Other: _____

2. Rent_____ Own_____ How long? _____

3. Year dwelling was built: _____ (can obtain from county tax assessor)

4. Type of home: ____single family ___ duplex ___multifamily apartment

5. Home is: ___owned ___rented/leased ___public housing ___Section 8 ____other

6. Has this home had any renovations in the last 6 months? _____Yes _____No
If yes, name of individual/company_____
Did you receive the pamphlet "Renovate Right" before renovations were started? (show pamphlet)
___Yes ___No ___Do not know
Did you sign a confirmation of receipt form? ___Yes ___No ___ Do Not know

7. Ask if home built before 1978: ___Yes ___No

8. Did you receive the pamphlet "Protect Your Family from lead in Your Home" from your landlord or realtor/seller? (show pamphlet) ___Yes ____No ___Do not know
Did you sign a disclosure form? ___Yes ___No ___ Do Not know

9. Peeling paint: Interior: _____Yes _____No _____
Exterior: _____Yes _____No _____

10. Check any of these items that the child eats, chews, or sucks on:

____Plaster	____Newspapers, comics, magazines	____Doors
____Paint chips	____Dirt	____Moldings
____Cigarette butts	____Toys, key chains, jewelry	____Guard rails
____Cigarette ashes	____Furniture (crib-bed)	____Metal objects
____Matches	____Thumb or fingernail	____Window sill
____Mini-blinds		

11. Is there chipping paint, broken plaster, peeling wallpaper or mini-blinds near the child's bed that can be easily reached or that can fall into it?
_____Yes _____No If yes, specify:_____

12. Does child take painted metal or printed objects to bed with him/her?
_____Yes _____No If yes, specify:_____

13. Does the child play with a cat or dog?
_____Yes _____No If yes, describe: _____

14. Live with an adult whose job or hobby involves exposure to lead? (examples: renovator/painter, highway or other construction, bridge repair/painting, paint manufacturing, smelting/refining, auto/boat repairs, radiator shop/repair, welding, soldering, torch cutting, metal foundry, salvage, recycling, battery manufacturing/recycling, plumbing, pottery/ceramics, jewelry making/repair, stained glass, photography developing, fine art painting, casting/working with bullets or sinkers, hunting or target/firing range shooting)?
_____Yes _____No If yes, specify all: _____

15. What kind of pots, pans, and dishes are used? _____
i.e. (lead soldered pots, pans, utensils, ceramics, pottery, leaded crystal, pewter)
What is used to store food ? Cans, pottery, pewter?
_____
What kind of cup does child drink from? _____

16. Is there a garden? _____ Where located? _____

17. Is there loose paint on wall/ceilings where food is prepared, the child eats, or where the child plays?

_____Yes _____No If yes, specify:_____

18. What is child's favorite place to play or hide?
Indoors_____
Outdoors_____
(Look for window play areas, closets, porches, outbuildings, under beds, out door areas with no grass)

19. Are nearby buildings/houses being renovated, repainted, or demolished?
If yes, location _____

20. How is the home's water supplied? ___city water ___ community water system ___private well

    (Specify community provider or other source) _____

21. Is tap water used to prepare infant formula, powdered milk, or juices for children? __Yes ___No
    If yes, __hot water _cold water ___both

22. Has new plumbing been installed recently? ___Yes ___No

23. Does the home have lead pipes or copper pipes soldered with lead? ___Yes ___No ___Don't know

24. Does the bathtub(s) have a nonexistent glaze or is it deteriorated? ___Yes ___No

25. Is the child currently playing with or has played with any of the recent recalled toys?
    Check www.cspc.gov for a list of recalls ____Yes ___No
    Or does the child have any painted or ceramic toys? (Examples include old painted boats, cars, soldiers, dolls, train sets)
    Describe_____

26. Does the family use special spices, ethnic/imported food items, or use kohl or other products that may contain lead? ____Yes ___No

27. Are special treatment or medicines used when the child is sick, or are natural supplements used that That are prepared by a relative, herbalist, or healer? ___Yes ___No
    (Some examples: Hispanic remedies include Greta, Azarcon, Liga, Maria Luisa, Coral. Asian remedies include Pay-loo-ah, Ghasard, Bali Goli, Kandu, Qian Dan, Huang Dan.)

28. Can you think of any sources of lead that your child may have been exposed to that we may have missed?

Describe_____

Signature:_____

Recommended Schedule for Obtaining a Confirmatory Venous Sample

Screening test result (µg/dL)	Perform a confirmation test within:
10-19	3 months (84 days)*
20-44	1 week to 1 month *
45-59	48 hours
60-69	24 hours
>70	Immediately as an emergency lab test

* The higher the blood lead level on the screening test, the more urgent the need for confirmatory testing. However, if a child is less than 12 months old, or there is reason to believe the blood level may be rising rapidly, an earlier diagnostic confirmation may be indicated.

Schedule for Follow-up Blood Lead Testing

Venous blood lead level (µg/dL)	Early follow-up (first 2-4 tests after identification)	Late follow up (after blood lead level begins to decline)
10-14	Within 3 months (84 days) *	6-9 months
15-19	1-3 months *	3-6 months
20-24	1-3 months *	1-3 months
25-44	2 weeks-1 month	1 month
>45	As soon as possible	Chelation with subsequent follow-up

* It is recommended to repeat blood lead tests on all new patients to ensure that their blood lead levels is not rising more quickly than anticipated. Seasonal variations may occur, and in Virginia there is often greater exposure in the summer months and this may necessitate more frequent follow ups.

Reference: Current CDC management recommendations adapted from *Managing Elevated Blood Lead Levels Among Young Children: Recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention.* (CDC, 2002)

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

Check List: Follow-up of Childhood Elevated Blood Lead Levels

Please complete check list and send "confidential" FAX to the Lead-Safe Virginia Program at 804-864-7723

Name: _____

D.O.B: _____

Address: _____

Parent/Guardian: _____

Phone Number(s): _____

Unconfirmed (Capillary/Screening Test) ≥ 10 µg/dL:

☐ Phone call or letter to family stating need for confirmatory (venous) draw (See *Guidelines for Childhood Lead Poisoning Testing* for timeframes).

☐ Phone call or letter to medical provider stating need for confirmatory (venous) draw. (See *Guidelines for Childhood Lead Poisoning Testing* for timeframes).

Confirmed (Venous Test) 10-14 µg/dL:

☐ Home assessment administered over phone or on-site investigation.

☐ Family advised of testing other children in household or relevant family members.

☐ Provided caregiver lead education: dietary and environmental.

☐ Referred family for WIC or other services.

☐ Referred to Social Services; family non-compliant. Date:_____

☐ Family advised of need for follow-up testing within three months.

☐ Follow-up letter or phone call to medical provider.

Confirmed (Venous Test) 15-19 µg/dL:

☐ Home assessment administered by on-site investigation.

☐ Referred for Environmental Investigation by a licensed risk assessor.

Referred to:_____ Date:_____

Note: If there is no licensed risk assessor in your district please contact the Lead-Safe Virginia Program at 804-864-7692 or 877-668-7987 for assistance.

☐ Family advised of testing other children in household or relevant family members.

☐ Provided caregiver lead education: dietary and environmental.

☐ Referred family for WIC or other services.

☐ Referred to Social Services; family non-compliant. Date:_____

☐ Family advised of need for follow-up testing within three months.

☐ Follow-up letter or phone call to medical provider.

Note: Environmental investigations are required if the lead level persists at 15-19 ug/dL or the blood lead level is increasing. One may also be required where infant or multiple children in a household have elevated blood lead levels regardless of levels.

Confirmed (Venous Test) 20-44 µg/dL:

☐ Home assessment administered and on-site investigation performed.

☐ Referred for Environmental Investigation by a licensed risk assessor.

Referred to:_____ Date:_____

Note: If there is no licensed risk assessor in your district please contact the Lead-Safe Virginia Program at 804-864-7692 or 877-668-7987 for assistance.

☐ Family advised of testing other children in household or relevant family members.

☐ Provided caregiver lead education: dietary and environmental.

☐ Referred family for WIC or other services.

☐ Referred to Social Services; family non-compliant. Date:_____

☐ Family advised of need for follow-up testing within one month. The higher the lead level the sooner follow-up should be performed.

☐ Follow-up letter or phone call to medical provider.

Confirmed (Venous Test) ≥ 44 µg/dL:

☐ Above actions, plus chelation under physician's care may be required. Consult with the Lead-Safe Virginia Program's Medical Advisor at the Emergency Lead Healthcare Information Line: (866) SOS-LEAD (866-767-5323).

Case Management Notes:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Case Manager's Signature:_____ Date_____

Environmental Intervention Blood Lead Investigation (EIBLI) Flow Chart Children < 72 Months

Venous EBLL referred for environmental investigation by Case Manager *

↓

Response time for environmental investigations should occur following the guidance for response time from the *Guidelines for Childhood Lead Poisoning Screening in Virginia.*

15 -19µg/dL persistent - within 2 weeks of referral

20 - 44µg/dL- within one week of referral

45 - 70µg/dL - within 48 hours of referral

≥70µg/dL - within 24 hours of referral

Referral: Proper paperwork is received from the Case Manager initiating the environmental investigation.
Note: This places the responsibility of initiating the environmental follow up in a timely manner on the Case Manager who has access to the medical information.

↓

EIBLI performed in accordance with VDH- Lead Safe Virginia's EPA approved Quality Assurance Project Plan (QAPP)

↓

EIBLI report is to be completed one week after the sample results are received from environmental testing lab and the report is to be sent to the owner of the property and a copy given to the tenant and building code official if lead hazard identified. A copy of the report is also given to the Case Manager and to the Lead Safe Virginia Program.

* Lead Safe Virginia may also initiate environmental investigation.

{Date}

Dear Parent/Guardian:

RE: Follow-up testing

This letter is to follow-up in regard to blood lead testing performed on your child or children:

{Patient Last Name, Patient First Name DOB: XX-XX-XX}

Our records indicated that your child/children had elevated a blood lead level that requires follow-up blood lead monitoring. The Centers for Disease Control and Prevention recommends that a child with an elevated blood lead level be evaluated and retested. This will both confirm the lead result and also assure that the level is not increasing. Elevated blood lead levels may interfere with your child's growth, harm hearing, and make learning difficult. Your child may seem healthy now, but they could have serious learning problems that you may not see until they get older. It is important to note there is no "safe" lead level.

We request that you contact your physician to assure that a follow-up blood lead monitoring is performed in the recommended time frame. This will allow us to ensure that your child/children receive the proper follow-up and care.

Educational materials for parents on protecting your family from lead in you home can be ordered through the Lead-Safe Virginia website at http://www.vahealth.org/leadsafe. If you have any questions or concerns, please feel free to contact us at {Contact Number}.

Sincerely yours,

{Name of Nurse}

{Date}

Dear Parent/Guardian:

RE: Case Closure

This letter is to follow-up in regard to blood lead testing performed on your child or children:

{Patient Last Name, Patient First Name DOB: XX-XX-XX}

Our records indicated that your child/children had elevated a blood lead level that requires follow-up blood lead monitoring. Elevated blood lead levels may interfere with your child's growth, harm hearing, and make learning difficult. Your child may seem healthy now, but they could have serious learning problems that you may not see until they get older. It is important to note there is no "safe" lead level.
Our records show that you have declined follow up services with the Virginia Department of Health and ignored follow up testing guidelines for your child. At this time we are closing this file to case management services. If at anytime you change your mind and would like to request the services with the Virginia Department of Health please contact us.

We request that you contact your physician to assure that a follow-up blood lead monitoring is performed in the recommended time frame. This will allow us to ensure that your child/children receive the proper follow-up and care.

Educational materials for parents on protecting your family from lead in you home can be ordered through the Lead-Safe Virginia website at http://www.vahealth.org/leadsafe. If you have any questions or concerns, please feel free to contact us at {Contact Number}.

Sincerely yours,

{Name of Nurse}

Appendix C

Medicaid Memos

Department of Medical Assistance Services
600 East Broad Street, Suite 1300
Richmond, Virginia 23219

www.dmas.virginia.gov

MEDICAID MEMO

TO: Early and Periodic Screening, Diagnosis, and Treatment Screening (EPSDT) Providers and DMAS-Enrolled Managed Care Organizations (MCOs) Participating in the Virginia Medical Assistance Program

FROM: Patrick W. Finnerty, Director
Department of Medical Assistance Services (DMAS)

MEMO Special

DATE 3/24/2006

SUBJECT: EPSDT Blood Lead Testing Requirements, Lead-Safe Virginia, & the Discontinued Usage of the Division of Consolidated Laboratories

The purpose of this memorandum is to notify EPSDT screening providers of mandatory blood lead testing requirements and guidelines from Lead-Safe Virginia, and to clarify the use of Medicaid enrolled laboratories for pediatric lead testing.

EPSDT REQUIREMENTS FOR LEAD TESTING

As part of the definition of EPSDT services, the Medicaid Statute requires coverage for children to include both screening and blood lead tests as appropriate, based on age and risk factors. The Centers for Medicare and Medicaid Services (CMS) requires that all Medicaid enrolled children receive a blood test at 12 months and 24 months of age. Children enrolled in Medicaid between the ages of 24 months and 72 months of age must also receive a blood lead test. The medical record will be deemed insufficient if the recipient has not been previously screened.

REQUIRED PHYSICIAN ACTIVITIES FOR EPSDT LEAD SCREENING

- Take careful history regarding possible lead exposure at each routine visit.
- A child must be tested if the parent or guardian requests testing due to possible exposure.
- Provide nutrition and risk reduction educational materials for parents (see the 2002 CDC Case Management Manual available on the Centers for Disease Control and Prevention or the VDH Lead-Safe Virginia web pages referenced in this memorandum).
- Testing may be performed by venipuncture or capillary. Filter paper methods are also acceptable. The use of handheld testing machines must be approved through the Lead-Safe Virginia Program to assure proper quality assurance and reporting of data.

- Confirm elevated capillary blood lead levels ≥10 µg/dL.
- A second capillary sample for confirmation is allowable if performed within 12 weeks (84 days) of the original capillary sample.
- A venous sample is considered "confirmed." If the venous sample indicates levels are at or above 15 µg/dL, an environmental lead investigation is warranted.

If result of screening test (µg/dL) is:	Perform diagnostic test on venous blood within:
10-19	3 months
20-44	1 month - 1 week*
45-59	48 hours
60-69	24 hours
70 or higher	Immediately as an emergency lab test

Lead-Safe Virginia provides clinical guidance for the management of children with elevated venous blood levels. The Lead-Safe Virginia Program provides treatment and/or follow-up advice through their free Medical hotline at 1-866-767-5323 (1-866-SOS-LEAD). The hotline is operated at the University of Virginia and is available 24 hours a day, seven days a week. If you have any questions about environmental lead testing, contact Lead-Safe Virginia toll-free at 1-877-668-7987. You may also email Lead-Safe Virginia at leadsafe@vdh.virginia.gov.

Primary care physicians (PCPs), MCOs, and other screening providers must work with the local health department to assure the following services are provided for children with EBL:

- Nutritional and environmental hazard reduction counseling;
- Developmental assessment and physical examination when appropriate (per CDC guidance); and
- Environmental investigations for children who have blood lead levels above 15 µg/dL.

LEAD TESTING PROCEDURE CODES

Service Description	Procedure Code
Capillary Sample	CPT 36416
Venous Sample (recommended)	CPT 36415
Lead Lab Test (paid to Lab or EPSDT screener)	CPT 83655
Specimen Handling/Conveyance	CPT 99000
Environmental Investigation	T1029

LEAD TESTING CLAIMS PROCESS

When lead testing is provided during a well child visit or other health care encounter, the EPSDT screener must use the lead testing procedure codes above with a "25" modifier in block 24D of the CMS-1500 Claim Form. Independent Laboratories or EPSDT screeners that have an approved laboratory will bill the 83655 code when the lead test is performed. When lead testing is performed in an office setting and no examination is done, claims will reflect only the lead testing or the appropriate specimen handling codes. A comprehensive list of Medicaid-enrolled lab providers is attached to this memorandum and may also be found by contacting the DMAS Provider HELPLINE, or by accessing the DMAS web site at http://www.dmas.virginia.gov/.

When blood lead testing is provided to a client enrolled in a Virginia Medicaid Managed Care Organization (MCO), please follow the MCOs specific billing instructions. Remember you should always verify Medicaid eligibility before services are rendered. Eligibility verification information is noted on page 4 of this memo. These systems also provide managed care enrollment information

LEAD-SAFE VIRGINIA GUIDELINES

Virginia regulations for "testing children for elevated blood lead levels" (12 VAC 5-120) requires that labs report ALL blood lead tests on children under the age of six within 10 days of analysis. Virginia "Reportable Disease" regulations also require the reporting of all "elevated" blood lead levels (EBL) on all ages using the EP-1 Form to the Office of Epidemiology at VDH. This form can be found on the VDH web site at www.vdh.virginia.gov/epi/epi1.pdf.

INAPPROPRIATE USE OF DIVISION OF CONSOLIDATED LABORATORIES

DMAS-enrolled physicians and health departments have previously sent lab tests to the Division of Consolidated Laboratory Services (DCLS) for lead testing analysis. Funding is provided to DCLS by the CDC for the analysis of tests for individuals who do not have insurance coverage for this service.

As of July 1, 2005, DCLS is not allowed to use CDC funds to provide lead screening/testing on children that are eligible for Medicaid or other insurance coverage. It is still appropriate to send blood lead tests to DCLS for children with no insurance and no ability to pay.

A list of Medicaid-enrolled lab providers is attached and also may be found by contacting the DMAS Provider HELPLINE, or by accessing the DMAS web site at http://www.dmas.virginia.gov/. For clients enrolled in MCOs, LabCorp is a contracted provider for all MCOs. Please contact the MCOs for whom you provide services for a complete list of laboratory providers and locations.

MEDICAID FUNDED ENVIRONMENTAL INVESTIGATIONS

Environmental investigations are a service offered by Medicaid through Lead-Safe Virginia. Environmental investigations are reimbursed to DMAS-enrolled health departments. Medicaid funds are not available for the testing of environmental substances such as water, paint, or soil. Please consult with the local health department or contact Lead-Safe Virginia to see if a patient qualifies for a risk assessment. For information about what an environmental lead investigation includes, go to http://www.vahealth.org/leadsafe/newslpp.htm. Individuals in an MCO who are in need of an environmental investigation will be referred to their local health department as this service is carved out of the MCO coverage.

REMINDER NOTIFICATIONS TO RECIPIENTS AND PROVIDERS

DMAS has revised the EPSDT birthday cards to include lead testing requirements and information for families about their upcoming well child appointments. The cards will be sent to all Medicaid-eligible recipients, including those enrolled in a MCO, under the age of 6. Follow-up notices will also be sent to the providers who have not billed a lead test as part of the relevant EPSDT screening to remind them that a test is required.

For more information about blood lead testing and lead exposure, consult the following resources:

Lead-Safe Virginia:
http://www.vahealth.org/leadsafe/index.htm

Environmental Protection Agency (EPA):
http://www.epa.gov/opptintr/lead/index.html

CDC Childhood Lead Poisoning Prevention Program and Journals of the American Medical Association Vol. 152, No.5, May 1998: A Community Outreach Lead Screening Program Using Capillary Blood Collected on Filter Paper:
http://www.cdc.gov/nceh/lead/lead.htm

Alliance for Healthy Homes:
http://www.afhh.org

Coalition To End Childhood Lead Poisoning:
http://www.leadsafe.org/index.htm

The National Lead Information Center (NLIC):
http://www.epa.gov/lead/nlic.htm

ELIGIBILITY AND CLAIMS STATUS INFORMATION

DMAS offers a web-based Internet option (ARS) to access information regarding Medicaid or FAMIS eligibility, claims status, check status, service limits, prior authorization, and pharmacy

prescriber identification. The website address to use to enroll for access to this system is http://virginia.fhsc.com. The MediCall voice response system will provide the same information and can be accessed by calling 1-800-884-9730 or 1-800-772-9996. Both options are available at no cost to the provider.

COPIES OF MANUALS

DMAS publishes electronic and printable copies of its Provider Manuals and Medicaid Memoranda on the DMAS website at www.dmas.virginia.gov. Refer to the Provider Column to find Medicaid and SLH (State and Local Hospitalization Program) Provider Manuals or click on "Medicaid Memos to Providers" to view Medicaid Memoranda. The Internet is the most efficient means to receive and review current provider information. If you do not have access to the Internet or would like a paper copy of a manual, you can order it by contacting Commonwealth-Martin at 1-804-780-0076. A fee will be charged for the printing and mailing of the manuals and manual updates requested.

"HELPLINE"

The "HELPLINE" is available to answer questions Monday through Friday from 8:30 a.m. to 4:30 p.m., except on state holidays. The "HELPLINE" numbers are:

1-804-786-6273 Richmond area and out-of-state long distance
1-800-552-8627 All other areas (in-state, toll-free long distance)

Please remember that the "HELPLINE" is for provider use only. Please have your Medicaid Provider Identification Number available when you call.

PROVIDER E-NEWSLETTER SIGN-UP

DMAS is pleased to inform providers about the creation of a new Provider E-Newsletter. The intent of this electronic newsletter is to inform, communicate, and share important program information with providers. Covered topics include changes in claims processing, common problems with billing, new programs or changes in existing programs, and other information that may directly affect providers. If you would like to receive the electronic newsletter, please sign up at www.dmas.virginia.gov/pr-provider_newletter.asp.

Please note that the Provider E-Newsletter is not intended to take the place of Medicaid Memos, Medicaid Provider Manuals, or any other official correspondence from DMAS.

DMAS Lead Testing Labs

Provider Name	Attention Line	Address Line	City	State	Zip	Phone Number
CMC LABORATORY SERVICES		15 CLEVELAND AVE STE 14	MARTINSVILLE	VA	24112-2937	(276) 632-8714
FAIRFAX MED LABORATORIES		4200 PLEASANT VALLEY RD	CHANTILLY	VA	20151-1211	(703) 222-2313
LABORATORY CORPORATION OF AMERICA		1447 YORK CT	BURLINGTON	NC	27215-3361	(336) 584-5171
LABORATORY CORPORATION OF AMERICA		6370 WILCOX RD	DUBLIN	OH	43016-1269	(614) 889-1061
LABORATORY CORPORATION OF AMERICA		13900 PARK CENTER RD	HERNDON	VA	20171-3222	(336) 436-8446
LABORATORY CORPORATION OF AMERICA		8040 VILLA PARK DR	RICHMOND	VA	23228-6507	(336) 437-8446
LABORATORY CORPORATION OF AMERICA		850 GREENBRIER CL STE N	CHESAPEAKE	VA	23320-0000	(757) 420-2883
LABORATORY CORPORATION OF AMERICA		501 LOCUST AVE	FAIRMONT	WV	26554-4719	(304) 366-0291
LAKEVIEW MEDICAL CENTER INC		2000 MEADE PKWY	SUFFOLK	VA	23434-4259	(757) 934-9309
LEWIS-GALE CLINIC		1802 BRAEBURN DR	SALEM	VA	24153-7357	(540) 772-3547
MAYO MED LABORATORIES	BUSINESS OFFICE	200 1ST ST SW	ROCHESTER	MN	55905-0001	(800) 447-6424
MEDEX REGIONAL LABORATORIES	MEDEX REGIONAL LABORATOR	1 MEDICAL PARK BLVD	BRISTOL	TN	37620-7430	(423) 844-3200
MEDICAL COLLEGE OF VA HOSP		401 N 13TH ST RM 522	RICHMOND	VA	23224-2119	(804) 828-4633
MEDTOX LABORATORIES		402 W COUNTY RD STE D	ST PAUL	MN	55112-3522	(651) 636-7466
MEDTOX LABORATORIES		402 W COUNTY RD STE D	ST PAUL	MN	55112-3522	(651) 636-7466
PIEDMONT MEDICAL LAB		333 W CORK ST STE 215	WINCHESTER	VA	22601-3871	(540) 536-5555
PRATT MED CTR-LTD LAB		12101 CAROL LN	FREDERICKSBURG	VA	22407-6101	(540) 899-5826
QUEST DIAGNOSTIC NICHOLS INSTITUTE		14225 NEWBROOK DR	CHANTILLY	VA	20151-2228	(703) 802-6900
QUEST DIAGNOSTICS INC		33608 ORTEGA HWY	SAN JUAN CAPO	CA	92675-2042	(949) 728-4269
QUEST DIAGNOSTICS INC		1901 SULPHUR SPRING RD	BALTIMORE	MD	21227-2943	(410) 536-1361
SPECTRUM LABORATORY NETWORK		4380 FEDERAL DR STE 100	GREENSBORO	NC	27410-8148	(336) 664-6142
TAMARAC MEDICAL	DONNA CLARK	7000 S BROADWAY STE 2C	LITTLETON	CO	80122-1064	(303) 794-1083
TAMARAC MEDICAL	DONNA CLARK	7000 S BROADWAY STE 2C	LITTLETON	CO	80122-1064	(303) 794-1083
THE CLINIC LABORATORY		ONE CLINIC DR	RICHLANDS	VA	24641-1102	(276) 964-6771
TRISTAR MEDICAL LABS INC	SAFDAR A CHAUDHRY	8350 TERMINAL RD STE C	LORTON	VA	22079-1422	(703) 550-7800

Department of Medical Assistance Services
600 East Broad Street, Suite 1300
Richmond, Virginia 23219

www.dmas.virginia.gov

MEDICAID MEMO

TO: Early and Periodic Screening, Diagnosis, and Treatment Providers, Infant and Toddler Connection Providers and DMAS-Enrolled Managed Care Organizations (MCOs) Participating in the Virginia Medical Assistance Program

FROM: Patrick W. Finnerty, Director
Department of Medical Assistance Services

MEMO: Special

DATE: 2/10/2009

SUBJECT: Recommended Developmental Screening Tools for Well-child and Early Periodic Screening Diagnosis and Treatment (EPSDT) Visits

The purpose of this memo is to clarify information previously released in an August 23, 2007 memorandum about reimbursement for developmental screenings and to inform providers of the preferred developmental screening tools that can be reimbursed. This memorandum will also provide information for providers about the importance of referring children at developmental risk to the local Infant & Toddler Connection and EPSDT services.

The Department of Medical Assistance Services (DMAS) is committed to increasing the number of children who receive well-child visits and developmental screenings in accordance with the American Academy of Pediatrics/Bright Futures Recommendations for Preventive Pediatric Health Care. It is hoped that the information in this memorandum will be helpful to providers in assisting DMAS in supporting these recommendations by using standardized developmental screening tools.

Over the past year and a half, DMAS collaborated with the Virginia Chapter of the American Academy of Pediatrics (AAP); the Department of Health; the Department of Mental Health, Mental Retardation and Substance Abuse Services; and private sector stakeholders to increase the use of developmental screening tools. The developmental screening is a component of health supervision conducted during a well-child visit when provided by primary care providers serving as young children's medical homes. As a result of this collaboration, DMAS eliminated several operational barriers that were not conducive to the reimbursement of developmental screenings. For example, DMAS increased the number of allowed developmental screenings for children in the target age range and eliminated prior authorization requirements for developmental screenings. Both DMAS and its' contracted Managed Care Organizations (MCOs) also made changes that allow reimbursement of

developmental screenings on the same date as a well-child visit or problem focused office visit. Also through this collaborative effort, a list was compiled of recommended developmental screening tools for use in well-child visits. In addition, a referral form to facilitate communication between the Infant & Toddler Connection early intervention providers and the medical home was developed to allow a better transfer of information between the local early intervention providers and the local primary care providers. A copy of this form is attached to this memorandum.

DEVELOPMENTAL SURVEILLANCE

Developmental surveillance should be conducted at each well-child visit. Developmental surveillance is the process of recognizing children who may be at risk of developmental delays. Surveillance is longitudinal, continuous, and cumulative and is comprised of the following components: parental concerns; developmental history; observation of the child; identification of risk and protective factors; and accurately documenting the process and findings. The following are examples of conducting surveillance:

- Parental concerns: Simple questions to parents such as "do you have any concerns about your child's development? Behavior? Learning? Asking about *behavior* can help identify issues, as parents may not be able to differentiate between development and behavior.
- Developmental history: Ask parents about changes since the last visit, and questions about age-specific developmental milestones such as walking, pointing, etc.
- Observation: The health care provider can often see evidence of age-specific developmental milestones, and may be able to confirm parental concerns. It is also important to monitor the parent's response to the infant, and vice versa.
- Risk and protective factors: Infants born prematurely, at low or very low birth weight, or with prenatal exposure to alcohol, drugs, or other toxins are at risk for developmental delay. Protective factors to support infants at risk, such as participation in home visitation program, or strong connections within a loving and supportive family, should also be considered in determining the overall degree of risk.

DEVELOPMENTAL ASSESSMENT AND SCREENING

If at any time developmental surveillance demonstrates a risk for developmental delay, a standardized screening tool should be administered to further assess the child. As recommended by the AAP, developmental screening using a standardized screening tool should occur at 9, 18, 24 and 30 months of age or at any time when surveillance indicates a risk for developmental delay. An autism specific screening is recommended at the 18 and 24 month visit. Children should be screened for developmental concerns at least 5 times while they are younger than three years of age.

Developmental assessment and screening differs from surveillance because the activity of assessment and screening includes the use of a standardized developmental screening tool. The tools used may vary according to the type of screening or assessment that is provided. All of the examples listed below can be performed by a parent or other office staff and interpreted by the physician during the "face to face" portion of the child's visit. These tools are designed to be used easily as part of the typical office work flow and the tools are very sensitive and specific with proven statistical validity.

Recommended Developmental Screening Tools

Parents' Evaluation of Developmental Status (PEDS),	Parent-report instrument used to identify general developmental delay in the general primary care population
Ages and Stages Questionnaire (ASQ),	Parent-report instrument used to identify general developmental delay in the general primary care population and/or broad high-risk population
Bayley Infant Neurodevelopmental Screen (BINS),	Practitioner-administered instrument used to identify general developmental delay in the high-risk population

Recommended Tools for Focused Screening for suspected health conditions:

Cognitive Adaptive Test/Clinical Linguistic Auditory Milestone Scale Expressive and Receptive Language Scale (CAT/CLAMS),	practitioner-administered instrument used to identify general developmental delay in the high-risk population
Language Development Survey (LDS),	a parent-report instrument used to identify language delay in the general primary care population
Clinical Linguistic Auditory Milestone Scale Expressive and Receptive Language Scale (CLAMS),	practitioner-administered instrument used to identify language delay in the high-risk population
Modified Checklist for Autism in Toddlers (M-CHAT)	parent-administered instrument used to screen for autism and developmental delay in the general primary care population

BILLING FOR DEVELOPMENTAL SCREENINGS

Assessment and screening is a reimbursable service when a standardized screening tool is used. Providers may bill for a developmental screening or assessment, using the Current Procedural Terminology (CPT) code 96110, (E&M) visit when Modifier 25 is used along with the appropriate E&M code (CPT codes 99201-215 and 99381-395) for that visit.

Providers may use the following modifiers, when appropriate as defined by the most recent (CPT). The recipient's medical record **must** contain documentation to support the use of the modifier by clearly identifying the significant, identifiable service, and tool used that allowed the use of the modifier.

- Modifier 22 – Unusual Procedural Service: When the service provided is greater than that usually required for the procedure code. Use of this modifier will cause the claim to pend for manual review and requires an attachment to explain the use of the modifier. Physicians should not apply this modifier unless there are unusual situations that warrant manual review.
- Modifier 24 – Unrelated E&M Service by the same Physician during the post-operative period.
- Modifier 25 – Significant, separately identifiable E&M Service on the same day by the same Physician on the same day of the procedure or other services.
- Modifier 59 – Distinct Procedural Service

REFERRALS FOR TREATMENT

When a developmental screening indicates the need for diagnosis or treatment for a suspected condition or abnormality, the child may be referred for medically necessary specialty care or other health services if the screening provider is not able to provide the treatment. Two of the options for referrals for treatment are listed below.

Early Periodic Screening Diagnosis and Treatment (EPSDT)

The EPSDT program is Medicaid's comprehensive preventive child health program for individuals under the age of 21. Federal law (42 CFR § 441.50 et seq) requires a broad range of outreach, coordination, and health services under EPSDT distinct from general state Medicaid program requirements. The goal of EPSDT is to identify and treat health problems as early as possible. EPSDT provides examination and treatment services when a problem is identified at no cost to the enrollee. Information about the EPSDT program can be found on the DMAS website at: http://www.dmas.virginia.gov/ch-home.htm#EPSDT or by calling the Maternal and Child Health division at 804-786-6134.

All FAMIS Plus (children's Medicaid) enrollees receive EPSDT benefits. Children enrolled in the FAMIS program in Fee-for-Service are also eligible for EPSDT services. Children enrolled in the FAMIS program who are in an MCO are not eligible for EPSDT treatment services although they do receive the comprehensive well-child visits and screenings referred to in this memo. They would also be eligible for Infant & Toddler Connection services.

Infant & Toddler Connection of Virginia

The Infant & Toddler Connection of Virginia assists families of infants and toddlers with developmental delays and/or disabilities to help their children learn and develop through everyday activities and routines so that they can participate fully in family and community activities. Since there are no income limits for this program, all children who meet the early intervention eligibility criteria and who are under the age of three are eligible to receive early intervention services. In order to take advantage of the services and supports available, families need to know about the system and how to access these resources! More information can be found about the Infant & Toddler Connection of Virginia at: http://www.infantva.org/.

Who is eligible for the Infant and & Toddler Connection of Virginia?

- **Infants and toddlers with 25% or greater delay in one or more developmental area(s):** Cognitive, adaptive, receptive or expressive language, social/emotional, fine motor, gross motor vision, hearing development
- **Infants and toddlers with atypical development – as demonstrated by atypical/ questionable:** Sensory-motor responses, social-emotional development, or behaviors, or impairment in social interaction and communication skills along with restricted and repetitive behaviors
- **Infants and toddlers with a diagnosed physical or mental condition that has a high probability of resulting in developmental delay:** e.g., cerebral palsy, Down syndrome or other chromosomal abnormalities, central nervous system disorders, effects of toxic exposure, failure to thrive, etc.

Instructions about how to refer children to the Infant and & Toddler Connection may be found online at: http://www.infantva.org/documents/pr-ReferralGuide.pdf.

The referral form for the Infant & Toddler Connection is attached to this document and it can be found online at: http://www.infantva.org/documents/forms/3094eEI.pdf.

ELIGIBILITY AND CLAIMS STATUS INFORMATION

DMAS offers a web-based Internet option (ARS) to access information regarding Medicaid or FAMIS eligibility, claims status, check status, service limits, prior authorization, and pharmacy prescriber identification. The website address to use to enroll for access to this system is http://virginia.fhsc.com. The MediCall voice response system will provide the same information and can be accessed by calling 1-800-884-9730 or 1-800-772-9996. Both options are available at no cost to the provider.

COPIES OF MANUALS

DMAS publishes electronic and printable copies of its Provider Manuals and Medicaid Memoranda on the DMAS website at www.dmas.virginia.gov. Refer to the "DMAS Content Menu" column on the left-hand side of the DMAS web page for the "Provider Services" link, which takes you to the "Manuals, Memos and Communications" link. This link opens up a page that contains all of the various communications to providers, including Provider Manuals and Medicaid Memoranda. The Internet is the most efficient means to receive and review current provider information. If you do not have access to the Internet or would like a paper copy of a manual, you can order it by contacting Commonwealth-Martin at 1-804-780-0076. A fee will be charged for the printing and mailing of the manuals and manual updates that are requested.

"HELPLINE"

The "HELPLINE" is available to answer questions Monday through Friday from 8:30 a.m. to 4:30 p.m., except on state holidays. The "HELPLINE" numbers are:

1-804-786-6273	Richmond area and out-of-state long distance
1-800-552-8627	All other areas (in-state, toll-free long distance)

Please remember that the "HELPLINE" is for provider use only. Please have your Medicaid Provider Identification Number available when you call.

PROVIDER E-NEWSLETTER SIGN-UP

DMAS is pleased to inform providers about the creation of a new Provider E-Newsletter. The intent of this electronic newsletter is to inform, communicate, and share important program information with providers. Covered topics will include changes in claims processing, common problems with billing, new programs or changes in existing programs, and other information that may directly affect providers. If you would like to receive the electronic newsletter, please sign up at www.dmas.virginia.gov/pr-enewsletter.asp.

Please note that the Provider E-Newsletter is not intended to take the place of Medicaid Memos, Medicaid Provider Manuals, or any other official correspondence from DMAS.

Infant & Toddler Connection of Virginia Referral Form

Physicians: Please complete this form for referring a child to early intervention if you prefer to do so in writing. Also please indicate the feedback that you want to receive from the early intervention program in response to your referral.

Child Contact Information

Child Name: _____ Date of Birth: ____/____/____ Gender M F
Home Address: _____ City_____ Virginia Zip_____
Parent/Guardian_____ Relationship to Child: _____
Primary Language:_____ Home Phone:_____ Other Phone: _____

Reason for Referral and Referral Information

☐ Developmental Evaluation, which may include evaluations by special instructor and/or physical and/or occupational therapist and/or speech language pathologist.

Medical Information (Please check all that apply):

☐ Identified condition or diagnosis (e.g., spina bifida, Down syndrome): _____
☐ Suspected developmental delay or concern (Please circle areas of concern):
Motor/Physical Cognitive Social/Emotional Speech/Language Behavior Vision Hearing Other_____
☐ Assessment Method/Tool used to identify delay or concern:_____
☐ Other (Please Describe):_____

Feedback Requested by the Referral Source

☐ Status of Initial Family Contact ☐ Services Being Provided to Child/Family ☐ Other:_____
☐ Developmental Evaluation Results ☐ Child Progress Report/Summary

Referral Source Contact Information

Person Making Referral:_____ Date of Referral:_____/_____/_____
Address:_____
Office Phone____/____-_____Office Fax:____/____-_____E-mail_____
Signature:_____

Infant & Toddler Connection Information

Program Name: _____
Address: _____City: _____State: _____Zip:_____
Telephone Number: _____Fax Number: _____
E-mail_____

Consent for Release of Protected Health Information

Extent or nature of use/disclosure is limited to: (Check or list all that apply)
History and Physical, including vision and hearing_____ discharge summaries___ evaluation reports ____
IFSP___ Progress notes____ other_____

Specified purpose or need for use/disclosure is: Intervention and Coordination of Care

Permission is hereby given to: _____ (Referral Source Name) to disclose information to: _____, (Local Early Intervention System Name, Street Address, City, State, Zip Phone/Fax #). I also authorize the recipient to use the information received pursuant to this authorization. As the person signing this authorization, I acknowledge that I am giving my permission to the above-named person/class of persons to disclose and use protected health information.

Permission is hereby given to: _____ (Local Early Intervention System Name) to disclose information to:_____, (Referral Source name, title and organization, Street Address, City, State, Zip Phone/Fax #). I also authorize the recipient to use the information received pursuant to this authorization. As the person signing this authorization, I acknowledge that I am giving my permission to the above-named person/class of persons to disclose and use protected health information. I further acknowledge that:

This authorization ___does ___ does not extend to information placed in my record after the date I signed this form.

I acknowledge that I have read and understand the following.

- I may refuse to sign this authorization.
- The referral source and the early intervention system cannot condition the provision of treatment to me on my signing of this authorization.
- The original or a copy of this authorization shall be included with my original records.
- I have the right to revoke this authorization at any time, except to the extent that action has been taken in reliance on it, by delivering the revocation in writing to the provider who is in possession of my health care records.
- There is a potential for any information disclosed pursuant to this authorization to be subject to re-disclosure by the recipient and, therefore, no longer protected by the provisions of the HIPAA Privacy Rule.

Signature of Individual (adult) or Legally Authorized Representative_____
Relationship_____ Date Signed_____
If not previously revoked, this authorization will expire in: ___90 Days ___One Year ___On *(specify date or event)*_____
The information may be disclosed effective: ____Immediately ___*(specify date)*_____